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MOOCs and open education: Possible roles, pedagogical practices, personalization, and pending trends.

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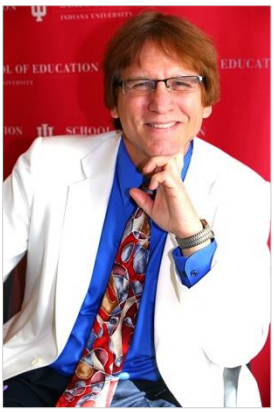

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Abstract:

In this article, Professors Curtis J. Bonk, Mimi Miyoung Lee, Thomas C. Reeves, and Thomas H. Reynolds discuss the events that led to their recently edited book on "*MOOCs and Open Education Around the World*" as well as a special journal issue on this same topic. They reflect on the role of MOOCs and open education in the developing world as well as how content from MOOCs might be creatively and effectively be used in any course. In addition, they offer timely guidelines on the design and delivery of MOOCs. Suggestions are also made concerning cultural sensitivity and personalization of MOOCs as well as possible resources and perspectives addressing MOOC quality. Near the end of this interview, Bonk, Lee, Reeves, and Reynolds point to research methods that might help close the many gaps or unknowns related to the effectiveness of MOOCs, important challenges facing MOOC researchers and instructors, and future directions and societal changes that those involved with MOOCs and open education need to take into consideration. They end with a discussion of where their research is headed and possible new directions and advancements in the field as a whole. As part of that discussion, they offer advice for working as a team on such complicated projects as an edited book. They also detail the topics and goals of an upcoming symposium on "MOOCs and Open Education in the Developing World" which they will coordinate in October 2017 at the E-Learn Conference in Vancouver.

Keywords: MOOCs, open education resources (OER), OpenCourseWare (OCW), cultural sensitivity, personalized learning, developing countries

The Role of MOOCs and Open Education:

1. **What do you think is the role of MOOCs and open educational resources (OER) in education (e.g., both K-12 and higher education)? Or perhaps you might want to discuss corporate or government settings**.

This form of educational delivery offers a chance to reach new and more diverse learners within every course. It widens the ethnic, cultural, educational, and social backgrounds of the learning participants. As such, multiple perspectives are nearly always in play. MOOCs and open educational resources (OER) also offer hope to those for whom access to education is a challenge; these could include geographically distant learners in deserts, jungles, mountains, or ice lands—as technology penetrates remote regions, MOOCs and open education can follow. But truth be told, these regions are not where most MOOC learners live as studies show that most MOOC learners come from the more affluent parts of the world that already have ample access to traditional approaches to education. Still, if just a few hundred or even just a handful of MOOC participants come from regions where the needs are much greater, it will mean progress.

Increasingly, MOOCs and OER in all educational settings and sectors offer opportunities for retooling, reskilling, and upskilling for those who already have an educational credential or degree. A key part of this role is the professional development opportunities that MOOCs and open education offer to those in need of new skills or competencies to maintain their jobs or move up in their careers. As our own research demonstrates, some individuals tap into open educational contents and OpenCourseWare (OCW) to learn needed skills such as website design or accounting in order to start a new business or begin a new career (see Bonk & Lee, 2017; Bonk Lee, Kou, Xu, & Shei, 2015). Others might be self-directing their own professional development efforts through what they encounter in the open education marketplace. Still others might simply be exploring personal interests such as learning a new language or are looking for a new hobby upon retirement. And a good number just want to fix or fine-tune something (e.g., an exercise bicycle) by accessing free online information.

We envision companies and government agencies relying on various forms of open education (such as MOOCs) to help retain as well as advance their employees. What is becoming increasingly apparent is that each organization or institution will have a unique model or design framework for how MOOCs relate to the skills, backgrounds, and needs of their workers. It will be important in the near future to capture and document these unique MOOC deployment models and perspectives in technical reports, handbooks, and conference symposia.

Perhaps what we are saying is that MOOCs embody an optimism not seen in education for some time. They are one vehicle available to the masses for learning something that is personally of interest as well as for acquiring the necessary knowledge for a new venture or to gain the vital skills for university study.

2. **How can MOOCs and open education influence pedagogical practices or educational programs in K-12 or higher education settings**?

Oh my, there are so many ways! In terms of innovative instructional or pedagogical practices, MOOCs might be used in a wide array of ways to enhance, extend, and transform educational practices and programs (Bonk & Khoo, 2014). First of all, learners in any class could be assigned to enroll in a MOOC on a similar topic, and, thereby, extend their learning from a second instructional approach or topic expert. We have experimented with this approach in our own classes and have found it to be highly valuable. Students have opportunities to explore content in the MOOC and write reflection papers on what they have discovered or completed. MOOCs can also be used to assist a wide range of students in need of remedial education such as different types of mathematics, critical reading, English grammar, and various study skills. Third, video lectures from a MOOC or open-courseware (OCW) can be used to flip a traditional class. In this way, learners can be assigned to watch MOOC videos each week, or a few times during a course, and the instructor in the live class does not have to lecture as much. Instead, he or she can engage students with case scenarios, problems, learning games, and other activities related to the content of the video lecture.

Those are just three ways. There are more. Many more. Fourth, learners might be tasked with using free and open content from the MOOC in some of their assignments, as such assigned activities can extend the course in new and interesting directions. Fifth, institutions of higher learning might offer a MOOC for free as a tool to recruit students to major in that topic or subject matter area. We have seen some universities in the United States offer one course for free as a MOOC; after that free course, the learners who like that content and sign up to major in it, must pay for the rest of the courses. And finally, along with the growing emphasis on outcome-based education, MOOCs and OER can play an instrumental role developing capacities that are later evaluated for credit or even learner credentialing. Such self-directed education that is vetted via paid assessment has been lightly referred to as the "Uberization" of education. Clearly, MOOCs that include badging and/or certificates are already moving in this direction.

3. **How can instructors design innovative MOOCs? Could you please share some models of instruction or instructional guidelines related to MOOCs?**

We have written about this in a recent book chapter on MOOCs (Bonk, Lee, Reeves, & Reynolds, 2018). Among the guidelines that we mentioned in that chapter include building in opportunities for feedback for the MOOC participants. That feedback might come from the instructor(s), other instructional staff members, and prior participants of the MOOC who have completed it and want to come back and help. Feedback might also come from self-evaluation of one's learning as well as peer feedback. And it might come from the technology in the form of system feedback and data analytics that track interaction with the content, course participation, or even some types of performances.

In addition to feedback, another MOOC guideline is to provide interactive experiences such as polling and learner preferences questions, especially during any synchronous events or webinars. Interaction can also come from drag and drop activities, decision making activities, animations, simulations, and participant discussions. There is nothing worse than simply clicking through preexisting content for the entire class.

Still another guideline is to segment long videos into shorter episodes or modules. In addition, at the end of every module, week, or unit, the MOOC instructor(s) should offer recaps of what has happened in the MOOC so as to reduce the information overload that is all too common when you have thousands of participants. Similarly, there should be ample opportunities for learner reflection. We have several more pieces of advice in that chapter. If you want to learn more, below is a reference to it.

4. What are your thoughts regarding evaluating and helping to guarantee the quality of MOOCs?

Evaluation is vital in this expansive and highly promising age of MOOCs and open education. If quality cannot be assured, many educators, politicians, and potential learners will opt out. They will find other ways to pursue their learning needs.

A more serious conversation needs to be started about MOOC quality. We have several chapters in our *MOOCs and Open Education Around the World* book related to quality indices for MOOCs. One such chapter explores the pedagogical approaches (e.g., constructivist, behavioral, other) of MOOCs. Another chapter focuses on the nature of the content in MOOCs. For instance, is the content in a MOOC clear, authentic, current, accessible, engaging, and aligned with prevailing needs and objectives. We also have the following article at the end of our special issue on MOOCs and open education that recaps some of the research and practice related to MOOC quality issues and evaluation schemes (Reeves & Bonk, 2015).

One definite takeaway from the book and special journal issue projects was that too many of the initial generation of MOOCs were based on pre-existing courses that had been quickly migrated into the MOOC delivery system. Accordingly, they were not designed using current instructional design principles or MOOC-specific learning and instruction approaches.

5. What does your book capture about open education?

One need not look beyond the opening chapter of our text to encounter a critique of the relationship between the current MOOC movement and the concept of open education. In that chapter, famed open education leader, David Wiley, argues there is a “MOOC misstep” in the offering of MOOCs by many universities; however, this could just as easily have been noted as a misalignment of current MOOC efforts with core principles of the open education movement. Wiley’s strong assertion that MOOCs have “done more harm to the cause of open education than anything else in the history of the movement” may be somewhat polemical. Nonetheless, his criticism that many MOOCs are only open insofar as openness is equated with initial entry or access to the MOOC--and not later reuse, remixing, and sharing--is an insightful assessment. In fact, such a perspective has gained traction with recent announcements from MOOC vendors and service providers that aspects of their MOOCs will either cost money or be limited in terms of access or assessment services.

When turning our focus to our own faculty community and colleagues, despite their progressive stance on so many other significant issues, most educators have not responded adequately to the call to arms regarding the creation, use, adaptation, and improvement of open educational resources let alone the implementation of educational practices built around collaboration, discovery, and the creation of knowledge. As such, any critique of the MOOC movement must include an acknowledgement that educators, even those at the most well-funded and prestigious institutions, have too often not made good on open education promises and expectations.

Ideas related to openness in education have existed for more than a century. Openness is a fuzzy concept that has traditionally been difficult to define, and, as a result, take advantage of (Baker, 2017). For the four of us, and many other educators, open education principles were formally realized with the 2007 Cape Town Open Education Declaration (http://www.capetowndeclaration.org/). Clearly stated in the declaration is the expectation that individuals and institutions will freely open up education for the common good. Key components of education specifically identified as arenas where openness could be impactful include those related to: (1) educators, (2) resources, and (3) policies. Now, ten years later, we frequently hear calls in journals such as this one for devoting more attention to sustainable MOOC business models as well as cautions about the limited instructional design innovation present in most MOOCs. In effect, many are commenting on MOOCs not as emblems of open education or something transformative, but, instead, as an integrated part of traditional educational practices. So just where is the innovation? Where is the freedom to learn? Where is the true openness to education when, in what order, and however one wants? These are the types of questions that need to be raised (see Baker, 2017).

Instead of freedom to learn, the question of the day seems to be "How can we make money off of this new form of educational delivery?" As noted by Professor Charles (i.e., "Dr. Chuck") Severance from the University of Michigan, tens of thousands of students take his "Python Programming" and his "Programming for Everybody" MOOCs and are quite willing to pay $50 USD or more for a badge or certificate. Similar numbers of people enroll in his "Internet History, Technology, and Security" MOOC with Coursera.

Given such huge enrollments, it is no accident that we are frequently asked to include comments on emerging MOOC business models. However, as Severance describes in Chapter 15 of our *MOOCs and Open Education Around the World* book, his goal is to foster learning by talking to students, both virtually as well as face-to-face in his various travels around the globe. He wants his MOOCs to enable learner freedom to learn, along with a sharing community and participant interaction and collaboration—all in the name of enhancing participant learning and growth. Nevertheless, at the same time, extrinsic rewards like end of course stickers, certificates, badges, and other records of completion often are what win out in terms of what gets in the news (e.g., Chuang & Ho, 2016). People want to know how many people received a badge or certificate and how much those fees bring in; not what new insights or creative ideas that these participants gained from the MOOC. Humans want to quantify the financial pay-backs before celebrating any learning or personal growth that may have occurred.

Aside from solicited critiques like those cited by Wiley, the extent to which current MOOCs align or do not align with core open education principles has been overshadowed by the collective response of institutions across the educational spectrum to the apparent disruptions caused by the presence of MOOCs on the educational landscape. Accordingly, increasingly abundant are anecdotes of the changes that have come at the hands of the MOOC movement. Examples abound. For instance, there is now a stand-alone MOOC-based Instructional Design and Technology MicroMaster's certificate from edX (see **https://www.edx.org/micromasters/instructional-design-technology#why-this-program)** that can be cobbled to the University of Maryland master's degree program in Learning Design and Technology (see **https://www.umuc.edu/academic-programs/masters-degrees/learning-design-technology-ms.cfm**). And, as mentioned in Chapter 13 of our book from Richard DeMillo at the Georgia Institute of Technology (Georgia Tech), there are several low-cost MOOC-based computer science programs that

people can complete to upskill or reskill themselves for better-paying and more-satisfying careers. Such brief programs and specializations are exploding. Just witness the dozens of specializations (e.g., Data Science, 3D Printing, Becoming a Journalist, Positive Psychology, Big Data, Statistics with R, Marketing Strategies, Virtual Teaching, Website Design and Development, and so on) that Coursera now makes available to its users.

Despite this sudden emergence of microcredentials, it is highly apparent to us that there are numerous failings of MOOCs and MOOC-like derivatives when considering them in light of the principles of open education. However, perhaps of more interest is that the best MOOC and open education analyses do not focus on their instructional design limitations or their non-alignment with open education principles. Rather, like other disruptive technologies, the benefit of MOOCs and the MOOC movement lies in the disruptions that they have brought to the traditional educational landscape. Institutions are being coerced into innovation by the presence of the MOOC threat—having to keep pace with the innovations and disruptions that MOOCs and other forms of open education have brought about. Stated another way, as with the personal computer movement of the 1980s and 1990s and the maker movement today, educational change is fortunately or unfortunately being brought about through the back door with the glamor of MOOCs and similar forms of open education.

MOOCs and Open Education in the Developing World:

6. Do you have any suggestions for educators in developing countries regarding how to use and develop MOOCs and open education resources?

Think about specific goals and how MOOCs align or do not align with them—not just what types of courses happen to be available. If you find a topic in dire need in your country or region and no course is available, do not wait—design it, teach it, and lead the way. Given that there are literally hundreds of potential MOOC topics, one also needs to prioritize the needs as the available funds can only stretch so far. If you are attempting to use existing courses or content, you need to localize it for your learners. Also, there are many MOOCs already developed that may only need translation or editing. However, others may need additional attention and effort to adequately localize the content. Suffice to say, within economic reason, we recommend making full use of any and all appropriate open educational resources.

7. What are some of interesting trends and innovations related to MOOCs and open education that you have seen?

MOOCs and open education have emerged so quickly and recently that there are bound to be a series of innovations and trends that educators will eventually take for granted. For instance, as briefly noted before, there is now a movement toward MOOCs and open educational courses and resources leading to some type of credential, certificate, or badge. A second trend is that, as part of broader efforts to certify work or lived experience via testing and evaluation, some educational institutions now charge specific fees for services to evaluate competencies learned via MOOCs or other educational activities. Obviously, people want something to show for their efforts—whether learned formally or through less formal means. There is also a trend to increasingly add humans to the loop—peer evaluation as well as teachers who grade work or simply offer feedback and advice. A fourth trend is to offer a MOOC for course credit. Again, the MOOC participants or learners want to receive something tangible for their efforts. A fifth trend is that MOOCs are migrating to lower levels such as secondary school youth taking MOOCs as part of their college readiness or preparation. Sixth, MOOCs are increasingly accessible using smaller devices such as smartphones in ways that connect learning to environs and other learners wherever you happen to be. Seventh, some MOOCs are being tailored for specific groups such as middle and secondary youth

preparing for entry to higher education or senior citizens looking for a new hobby or unique learning outlet or experience.

Cultural Sensitivity and Personalization Related to MOOCs:

8. **I know that your team has an interest in cultural sensitivity and personalization of MOOCs and open education. Since MOOCs have a massive audience from a variety of countries and cultural background, how do those cultural differences influence the learners' learning**?

Cultural differences play out in many ways, including what the learners focus on, how they interact with others, how seriously they take the course "requirements," and how often they access the course materials. Clearly, this is a complex topic which is difficult to address in just a short paragraph or two.

Still, one simple example of cultural differences in MOOCs is that learners will be in different time zones making it difficult to set up any live or synchronous lectures or even arranging small group team meetings. In addition, participants from Latin America, East Asia, the Middle East, North America, and other parts of the globe might respect course start and end dates in vastly different ways. Some cultures may emphasize promptness, and, hence, participants from such regions may start working on course tasks early and work in alliance with the course schedule. Others may wait to do the readings or watch the lectures until much later in the course or may even wait until it is nearly over. Keep in mind that there might even be marked differences in the pace of coursework completion within a particular group, such as those who live more harried lives versus those work live in communities or regions of the world which are somewhat more lax—where even due dates are understood to be tentative or at least somewhat flexible.

There may also be different days of the week for religious observation or different holidays that must be taken into account for any synchronous events or activities (e.g., Webinars) during the MOOC; not every culture or person treats Saturday or Sunday as a day of rest. But geographic time, pace, and religion are just three of a multitude of factors which instructors must take into account when designing as well as when delivering a MOOC. Another issue is that some cultures may emphasize competition and individual work, whereas other cultural groups or mores may place more value on collaborative and more socially-interactive educational environments. Not too surprisingly, these and many other concerns are already highly apparent in online courses that are much smaller than MOOCs; however, MOOCs dramatically amplify them.

9. **How can instructors design and develop MOOCs to address the barriers brought by culture differences?**

Well, we asked this very question of the contributors of our book on MOOCs and open education. One suggestion that we have seen others like Professor Paul Kim at Stanford use is to recruit the participants of the MOOC to translate content into local languages and to find ways to make the resources available for others. For instance, they might create low bandwidth versions of course videos. They might also encourage students to add captions and make the contents available in local cloud services. Professor Kim, who has a popular chapter in our MOOCs book, also suggests having communication options for discussion boards (WhatsApp, WeChat, KakaoTalk, etc.). Another chapter was contributed by Sanjaya Mishra from the Commonwealth of Learning (COL) in Vancouver and Delhi. He advises that MOOC designers should be culturally sensitive to music and pictures while designing content for global audience.

Still others like Professor Karen Head at Georgia Tech caution MOOC providers to be mindful that jokes and humor that can be easily misinterpreted. She also notes that one should be careful with finger pointing, whereas Charles Severance suggests avoiding hand gesturing at all times. Dr. Head also offers cautions about the use of visual images and metaphors that might represent a particular meaning in one culture but be meaningless or even offensive in another. In fact, clothing, hair style, body movements, etc., can all be problematic.

Honoring cultural preferences has led to discussions and suggestions that MOOC designers should consider optimizing learner control as an instructional design feature. Self-accommodation could be built into MOOC activities and resources through branching or even opting out of using specific content. In addition, when designing and developing a MOOC, one must be cognizant of animations, simulations, videos, images, and other content that may be difficult to access or download in another culture or region of the world. Our book chapter participants had many more guidelines and suggestions (see the following link for the handout: http://www.trainingshare.com/pdfs/Cultural-Sensitivity-Issues-Related-to-MOOCs.pdf).

10. In China, some universities have launched or would like to launch MOOCs, do you have any suggestions for MOOC instructors as they design and develop their MOOCs?

We have given some guidelines in previous questions, but one thing that we have yet to mention is the need to plan the design and delivery of a MOOC with great care. MOOCs are complex and can impact thousands of potential learners around the world. Hence, there is a need to double check all your resources and activities, apply very specific design features that align with and answer to the needs of the intended participants, and include in the design process faculty members who will teach or assist in the MOOC, as they too need to be fully onboard.

You do not want to be an instructor or member of an instructional team that has a failed MOOC. Test everything, and then go back and test it two more times. You might pilot test access to the online readings, lecture videos, and the required as well as optional course activities with potential students. Make careful notes on resources that they have trouble accessing or using. In effect, as much content, tools, and resources as possible should be designed and thoroughly tested prior to the first class. Like other online instruction, MOOC participants need to be clear about the requirements and expectations, especially those that diverge from other online experiences participants may have previously had. And if the course encounters problems, the MOOC instructor(s) and design team must be willing to make needed changes to the way the course is being delivered as well as the assignments and evaluations.

As with any new course development, the MOOC instructors and design team need to talk to others who have designed or offered MOOCs. Getting their perspectives and advice will save time.

11. Can a MOOC ever be personalized? If so, please explain how. What does personalization actually mean when it comes to a MOOC?

This is a great question and one that we have been asking ourselves for several years now. The honest answer is that we do not know. At the same time, our answer is also that personalization comes in many forms. It might happen through the use of one's name and from immediate human feedback related to one's answers and activities. It might happen, as previously mentioned, by allowing the learners to select their learning materials and path from a wealth of resources and potential course activities; in effect, a series of self-accommodated learning paths and pursuits. Personalization can also occur when learners

join small teams to discuss common areas or topics of interest. And it might come from learning analytics and systems of embedded feedback for different learner responses and selections.

These four examples display some of the range of ways in which personalization can occur; namely, from (1) instructor actions and sense of caring; (2) learner autonomy and control; (3) the learning community; and (4) artificially intelligent (AI) systems design. Educators might emphasize the first two or three topics of this list, whereas computer scientists would likely be more concerned about the final one.

12. Can you offer predictions as to the stages or phases in the development of more personalized types of MOOCs? Stated another way, what are some things that might be accomplished first and then what might come later? The same question or issue might apply to cultural sensitivity. Right?"

It is difficult to say that there will be stages or phases in the development of MOOC personalization since, as previously stated, there are at least four forms of personalization. Perhaps the type of personalization that most people associate with personalization is when AI systems can automatically figure out what is needed and when. Please note that this position obviously discounts all future instructional designers who grow up learning in MOOC-based systems; they will undoubtedly bring a needed experienced learner perspective to the design table.

Meanwhile, it is important for anyone seeking to design or teach via MOOCs to enroll and complete as many different types of MOOCs as possible from different providers. Almost all great writers of novels and other books are voracious readers. Similarly, MOOC designers should be informed consumers of the current state-of-the-art of MOOC design and delivery. Doing this will provide many ideas for the design of new MOOCs, but also highlight the kinds of interactions to avoid.

Research and Future Trends of MOOCs and Open Education:

13. There remain many gaps or openings in the research on MOOCs and open education (e.g., learner engagement and interaction, course completion and retention, skill transfer, respect from the business world, course quality, etc.). How should researchers investigate them?

The unexplored areas in MOOC research reflect the gaps in traditional educational technology research. The goals pursued by educational technology researchers take on at least six different orientations. First, some researchers have "Theory Development/Synthesis" goals as they seek to explain how education works through the logical analysis and synthesis of theoretical knowledge and principles related to teaching and learning as well as the results of other research. Second, researchers with "Exploratory/Hypothesis-Testing" goals focus on discovering or specifying how education works by testing hypotheses related to theories and models of teaching and learning. Third, researchers with "Descriptive/Interpretivist" goals aim to portray how education works by describing and interpreting phenomena related to teaching and learning. Fourth, researchers with "Critical/Postmodern" goals focus on examining the assumptions underlying education and its effects on teaching and learning with the goal of empowering disenfranchised minorities such as impoverished people in developing countries. Fifth, researchers with "Design/Development" goals focus on the creation and improvement of effective solutions to educational problems as well as the identification of reusable design principles related to teaching and learning in close collaboration with practitioners. Finally, researchers with

"Action/Evaluation goals" focus on a specific program, product, or method, usually in an applied setting, to describe, improve, or estimate its effectiveness and worth.

Each of these goals has merit, but we strongly recommend that MOOC and open education researchers should more fully pursue "Design/Development" goals by engaging in educational design research (EDR) (also known as designed-based research (DBR)). EDR/DBR is not a specific research methodology, but rather an evolving research genre in which the iterative development of solutions to complex educational problems and the refinement of theoretical design principles provide the setting for rigorous scientific investigations. When pursued over time, EDR/DBR has two major outcomes: (1) robust solutions to real-world problems, and (2) enhanced theory leading to better understandings from such theoretical viewpoints; the latter most often in the form of reusable design principles. The solutions that result from EDR can be educational products, processes, programs, or policies.

In the context of MOOCs and open education, such a solution could be an innovative open learning environment that helps under-prepared high-school leavers make a successful transition to postsecondary education. Simultaneously, EDR/DBR reveals new knowledge that can inform the work of others facing similar problems, such as design principles that could be applied to the design and implementation of more effective MOOCs. Conducting EDR/DBR often requires the same quantitative and qualitative tools that are utilized to pursue other research goals; however, most often, EDR studies utilize mixed methods with respect to data collection and analysis.

14. What are some of the challenges regarding researching MOOCs and open education?

Although, at first glance, it might seem that the massive volume of learners involved in MOOCs may afford better opportunities for using quantitative data methods or emerging methods of "learning analytics;" however, the daunting reality of MOOCs is that having tens of thousands of learners in a single course also brings with it many types of new challenges never witnessed in the history of humankind. For instance, how does an instructor address or answer all student questions and concerns? Second, what happens when there is a mistake in the content or in the assignments? How quickly can it be addressed and ameliorated to the satisfaction of all enrolled participants? Third, it can be difficult to attain informed consent for learner participation in research protocols involving MOOCs. In addition, there are serious reservations about confidentiality among so many learners. Our experience suggests that a blend of mixed quantitative, qualitative, and even critical analytic methods may be necessary to realize ambitious "Design/Development" goals.

15. Ok, what you state above are primarily challenges of MOOCs; but what are some challenges of open education?

A key challenge of open education is the growing realization that faculty members and administrators are not even aware that such resources exist (Allen & Seaman, 2014). And even when they do know something about them, they typically have not used them or even bothered to review them (Green, 2016). This finding holds for open textbooks as well. World mapping tools that show where open education projects are located around the globe are one way to combat this awareness problem (e.g., https://oerworldmap.org/). But that is clearly not enough to educate the millions of K-12 teachers and college and universities instructors on this planet who need such training and awareness today or will in the near future.

A related concern or challenge is not having the time to locate or figure out how to use educational tools, content, and resources that are now free and open but used to be highly expensive or nonexistent. Just

because what was once scarce is now bountiful is not enough. Of course, time constraints are often a concern for instructors no matter what emerging technology or trend that comes up. Third, even if there is adequate instructor awareness, time, and resources available, the use of OER and OCW in courses and programs often requires some encouragement or incentives as well as the establishments of internal policies about their uses. Reliance on OER has to become part of the standard practices of instructors. As Carina Bossu, David Bull, and Mark Brown discuss in Chapter Five related to "Enabling Open Education: A Feasibility Protocol for Australian Higher Education," OER must be part of the strategic plans and policies of an organization or institution; and, once established, there should be guidelines on OER development and adoption. Fourth, as these resources are created, they need to become better indexed and then continually updated or modified. The continued refinement will definitely help address the quality concerns that educators and other stakeholders continue to raise. Clearly, there is a pressing need to get free and open educational resources to the people who need them in a timely fashion.

16. What are some of the future directions of MOOCs and research trends in MOOCs and open education?

The future of research focused on MOOCs and open education will inevitably be influenced by developments in other areas. For example, machine learning is developing so rapidly that many career paths currently open to university graduates are going to be assumed by algorithms and/or robots in the near future. These are not just easily-automated manual labor jobs such as filling orders at online stores or inserting bolts in a manufacturing assembly line, but will impact professions such as those of pharmacists, doctors, accountants, computer programmers, lawyers, and journalists that have relatively high cognitive demands. In the coming decade, advances in artificial intelligence (AI) will filter into most our daily work and personal lives from mundane tasks such as the delivery of consumer goods using drones and automated trucks to those that are much more complex like writing news articles or categorizing knowledge.

Such trends in robotics and AI may lead to economic and social devolution around the world. How can MOOCs or other forms of open education be developed to prepare people for a world in which the very meaning of employment may change? Suppose that many millions of people must survive on some sort of "guaranteed minimum income" without the necessity to have a career or job in the traditional sense. Can open education enable people to find fulfillment in activities other than work? Can people learn to be more creative, artistic, or altruistic through their self-directed online leaning pursuits? What will expert guidance look like in such situations? These are important questions. Many other such questions will emerge as society shifts toward more intensive and stunningly new forms of automation.

The MOOC and Open Education Book Creation Process:

17. How did you come up with the idea of writing/editing this book? What about the special journal issue?

In 2008, we coordinated a symposium on e-learning in Asia at the international E-Learn conference in Las Vegas, Nevada, USA. After that conference, we worked as a team on a special journal issue on e-learning in Asia that became a print on demand book (Bonk, Lee, & Reynolds, 2009). In 2013, we organized another symposium for the international E-Learn conference in Las Vegas. This time, the event that we spearheaded was on massive open online courses (MOOCs) and open education. Over 100 people participated in the symposium; many of whom later submitted chapters for the book or research articles for the special journal issue.

In effect, the idea for the book (Bonk, Lee, Reeves, & Reynolds, 2015) and special issue (Lee, Bonk, Reynolds, & Reeves, 2015) evolved through the ideas, actions, and enthusiasm of the preconference symposium participants. In retrospect, it was fortunate timing in that MOOCs and other alternate forms of delivering instruction have continued to evolve and expand since 2013. So when the book and special journal issue were published in the summer of 2015, they were timely and well received.

18. Could you explain more about the core value of the book "*MOOCs and Open Education around the World*" (http://www.moocsbook.com/) and how this book will guide/influence the research and practice?

In terms of core value, as everyone realizes today, new digital forms of both formal as well as informal learning and delivery of that learning are proliferating. As this occurs, there is a mounting need to better grasp how people in different regions of the world are accessing, adopting, implementing, and evaluating MOOCs and other forms of open education, including open educational resources (OERs) and OpenCourseWare (OCW). Advances in this field not only impact learners around the globe but also educators and instructional designers designing and teaching such courses, researchers evaluating in the field of open education, politicians funding new programs and other educational initiatives that take advantage of MOOCs and open education, and numerous other stakeholders. Each of these potential audiences want to better understand what the outcomes of the various MOOC and open education initiatives are and how they can be improved.

Keep in mind that for past couple of decades ongoing e-learning and blended learning developments related to both technology and pedagogy have pushed institutions and organizations to grapple with many pressing issues; MOOCs and open education are now a key part of such developments. Among the key issues addressed in the book include those related to accreditation, credentialing, quality standards, innovative assessment, and learner motivation and attrition, among other areas of concern. The various 32 articles found in the *MOOCS and Open Education Around the World* book address these concerns and issues in vital ways. They help open a window into what is currently happening around the world.

As indicated, *MOOCs and Open Education Around the World* explores and illuminates unique implementations of MOOCs and open education across regions and nations, including Japan, South Africa, Australia, the UK, Germany, the Netherlands, Canada, the United States, New Zealand, India, Malaysia, and Indonesia as well as the African continent as a whole. The book also sheds light on the myriad opportunities as well as the many dilemmas presented as technology-enabled learning advances and is refined. It is also intended to reveal effective ideas related to different delivery formats, learner and instructor interaction possibilities, innovative assessment schemes, and the range of possible business models for MOOCs and open education. At the start and end of the book, we four editors attempt to point to the key controversies or issues that must be discussed and addressed in the coming decade. We hope that this unique edited collection of chapters from various parts of the world can help explain MOOCs and open education trends and issues in a variety of contexts, shares key research endeavors and recent findings, and provide practical suggestions and recommendations for the field of open education in the near future.

19. What did you discover along the way when completing these projects? Any useful insights or tips or new perspectives that you might share? Or perhaps you have an interesting story or two to share.

We learned many interesting things about MOOCs and open education while writing and editing the book and special issue. Although we ended up with a wide-ranging representation of content and contributors, we had difficulty locating scholars from Latin America and the Middle East who were conducting MOOC and open education research. Hence, there are no chapters related to those two significant parts of the world. Also, it was difficult to provide full global coverage of what was happening due to time constraints and word limitations set by the publisher, the availability of those we approached, and content continuity. We went with those authors who could meet our timelines and space demands and whose content best fit the organizational structure and concept of the book. So even though the book title indicates that we are addressing MOOCs and open education around the world, we only have one article from China, and that is in the special journal issue, not in the book. Additionally, we would have loved chapters from places like Korea, Brazil, Saudi Arabia, Russia, Mexico, Kenya, Poland, Turkey, and Iran.

One specific realization that became very evident the longer we worked on the project was that the business models for MOOCs and open education were in a state of flux as was the assessment of MOOC quality. These concerns are as true today as when we edited the book. What may appear to be a solid business plan or approach one month may not be viable in the next. In addition, the leadership of major MOOC entities change rapidly. For example, the co-founders of the prominent MOOC provider Coursera have left the company for other ventures.

Innovative design of instruction and assessment of MOOC quality also remains a critical need—without advancements in these areas, the potential of MOOCs and other alternative online learning mechanisms will remain stagnant. The project taught us that many instructors remain wary about teaching online in any capacity, but especially in MOOCs. Concerns about the instructional design quality of MOOCs are more pervasive in the developed parts of the world; in contrast, developing countries still see the availability of and access to content, in any form, as the key concern.

20. What is like editing a book and special issue in a team of four? Do you have advice for readers of this journal who might want to take on similar projects? For instance, how does one find authors from around the world to contribute chapters to such a book project or journal issue?

When you work in a team, you first must create and then agree to a schedule or timeline for the project as well as workload and workflow assignments. For the four of us, this meant that at least two people would review each chapter thoroughly while the other two conducted secondary reviews. We typically volunteered to review the topics or chapters that seemed most interesting to each of us, and we met at fairly regular intervals online as a group to discuss our progress as well as address specific challenges and concerns. Generally, manuscripts were circulated via email using document review and change tracking; this procedure was followed to maintain as much transparency as possible as well as create opportunities for each person to contribute.

We also created and used lists of active and potential contributors and topics to the book. Of course, we had to keep these lists updated throughout the project, as they needed continuous attention, reflection, and modification. We regularly reviewed who and what types of research and specific articles we had read about in publications as well as heard in various conference presentations. We also shared citations of popular MOOCs articles and various social media. When new people were identified, we followed up with those people as to their availability and interest. Given that items make the news headlines for a reason, we continually scanned MOOC and the open-education literature for interesting or controversial publications. We did not simply agree to the first people and topic areas that came to mind. Rather, we made purposeful attempts to rationalize choices in terms of the sequence, availability, and coherence. Although we had numerous contributors, we tried not to have too many from a particular region of the

world, type of institution or organization, or topic or theme. We also worked to include senior or established scholars as well as some people who are on the rise or from unique circumstances.

It is also important to note that most collaborative teams benefit from strong leadership, project management, and some sense of community or comradery. Without a doubt, ours certainly did. Although all members of the team contributed a great deal, the project never would have attained its goals without careful leadership by the lead author combined with highly democratic forms of participation which allowed each of us to critique and refine any suggestions and ideas from each other. As a result of this democratic approach, we remained close and committed colleagues all the way through the process. Sure, it was a ton of work; but, we continued to see progress toward common goals whether it was completion of chapter drafts or the collection of participant bios, pictures, and contracts. The exact task did not really matter since we realized that each of us possessed vital expertise, passion, experiences, and expectations to lend to the process and ultimately complete it.

Being aware of our respective interests and talents helped us coalesce as a team and expedite the process. With such an approach, each chapter of the book and special issue went through a transformational process that resulted in a final product that everyone was more than satisfied with. The key ingredients to our team success included respect, candor, humor, sharing, organization, being sensitive to the time constraints and schedules of others, and careful division of tasks and responsibilities. Of course, to truly be successful, these ingredients required timely and well organized agenda and meetings.

Keep in mind that we have been working together since the early part of 2008. During this decade of collaboration, we have employed many technologies and methods of collaboration. For instance, we initially utilized Adobe Connect and Skype as well as the standard telephone for our team meetings. However, we later enjoyed using Google Hangouts and, most recently, Zoom. We also relied on email to coordinate schedules, and, at times, wiki tools like Wikispaces and PBworks were used for brainstorming and generating lists. Additionally, the various tools of Microsoft Office have functioned well when needed. Technologies aside, it is the human spirit of inquiry and mutual respect and commitment to project completion that were the vital seeds to success.

What is Coming Next:

21. What are you in the midst of or currently working on individually or as a team?

We are each involved in different research projects. Among these topics are the personalization of MOOCs, cultural sensitivity of MOOCs, MOOC instructional design approaches, and the research paradigms that scholars are using to better understand MOOCs and their benefits. Suffice to say, the needs that our research agendas are trying to meet are quite diverse and range from enhancing public health around the globe to increasing access to education and personal development opportunities to people who are incarcerated.

As a team, we are organizing another symposium for the 2017 annual E-Learn conference. This time, the symposium will specifically target MOOCs and open education in the developing world. The conference will take place October 17-20, 2017 in Vancouver, Canada. Please join us. The event will most likely take place on Tuesday October 17th. Here is the conference link: http://www.aace.org/conf/elearn/. There will also be a free online panel on the night of Monday October 16 which will be early morning in China and other parts of Asia. More details to come.

22. Could you please explain more the core topic of the symposium for the 2017 annual E-Learn conference?

In terms of specifics, there are many issues that organizations and institutions attempting projects related to MOOCs and open education in the developing world are presently grappling with. For instance:

- To what extent are MOOCs reaching those who previously lacked adequate educational access? A growing body of research shows MOOC takers are mostly college graduates from developed countries. How can learners in developing countries be empowered to more easily access and engage in these open learning opportunities?
- To what extent can MOOCs lead to the empowerment of people previously disenfranchised? And, just how does this play out in actuality?
- To what extent can MOOCs and open educational resources lead to the greater achievement of sustainable development goals? In what ways might this vary by region of the world and country?
- How are those in developing parts of the world dealing with the English language dominance of MOOCs and other forms of open education? For instance, we know that there are now K-MOOCs for Korea (http://www.kmooc.kr/), JMOOCs in Japan (https://www.jmooc.jp/en/), and, most recently, Thai MOOCs (see https://thaimooc.org/).
- How are individuals as well as organizations and institutions dealing with MOOCs that are not entirely open or free? What happens when they cannot afford them or do not expect to pay for their use?

Of course, there are many other emerging challenges in this context. For instance, as indicated earlier, institutions and organizations continue to struggle with issues of accreditation, credentialing, quality standards, innovative assessment, and learner motivation and attrition, among numerous other areas of concern. They also want to find effective ways to use technology to empower women and girls to shape their own futures as well as those with limited educational backgrounds and opportunities. Along with such issues, researchers and scholars are now targeting topics related to openness, ethics, privacy and security, fiscal responsibility, and different business models of success. Many educators are looking for answers and ideas in fields such as learning analytics, adaptive learning, and alternative assessment.

In response to the above issues, this preconference symposium will explore and probe unique implementations of MOOCs and open education across regions and nations. Symposium participants will explain the MOOC and open education trends in their respective locales, share key research directions and findings, and provide suggestions and recommendations for the coming decade. Symposium facilitators will help participants bond and form communities of learning and inquiry.

Symposium Goals:

1. Clarify the far-ranging opportunities for alternative forms of instruction such as MOOCs and open education in the developing world.
2. Identify emerging trends, projects, and innovations in e-learning and new possibilities for professional development at a distance.
3. Enhance understanding of the educational, cultural, political, and economic challenges and issues facing various stakeholders in open education environments.
4. Share experiences, obstacles, and opportunities with peers in different institutions and organizations around the globe.
5. Identify and select MOOC and open education content and colleagues for future collaboration in communities of inquiry and practice.
6. Solicit interest in creating reports, special journal issues, books, or other resources related to this topic.
7. Develop a community of practice with fellow e-learning instructors, researchers, administrators, government officials, instructional designers, consultants, etc.

23. What might be your next project(s) in this field?

It is possible that another special journal issue or book may evolve from the symposium event mentioned above. That is a question we are currently dealing with. Such projects take much time and commitment. It will depend, at least in part, on the four of us and the symposium participants. Nevertheless, all four of us share an interest in and commitment to increasing educational access as well as quality around the world so don't be surprised if some exciting new initiatives emerge from our continued collaborations and projects.

24. What else would you like to discuss about this emerging field or your recent book project?

There is much still to be known in terms of research and best teaching practices. In fact, there are literally hundreds of potential research questions that those reading this article can pursue. Such research may relate to MOOC learner motivation, learner transfer and use of knowledge in other contexts, the credentialing of skills obtained from a MOOC, quality assessment of MOOC learning, the evaluation of MOOC instruction and design, MOOC program development or degrees, etc. There is also a need for scholars to capture MOOC success stories (as well as failures) so as to inspire others to learn from MOOCs and to better understand the constraints, barriers, and challenges facing MOOC participants and stakeholders.

25. If you had to select one key advancement in the coming decade that you would want to see happen within the field of MOOCs and open education, what would it be and why?

The continued focus on the development and delivery of MOOCs for those with limited or no access; especially those currently or previously living in extreme poverty or war-torn areas. As part of such efforts, it is vital to assess job placement and other economic factors that can result from MOOC participation for refugees and others who are marginalized or disadvantaged. After all, MOOCs were touted as the great new hope for 21st century equitable access to education, so let's all do what we can to make that aspiration a reality!

			
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