China Educational Technology: A Conversation with Curtis J. Bonk, Mimi Miyoung Lee, Thomas C. Reeves, and Thomas H. Reynolds

By Curt Bonk for Innovate Learning Review, May 16, 2017

About the Interviewers

Meina Zhu is a second-year Ph.D. student in Instructional Systems Technology (IST) department of Indiana University (IU). She holds a master's degree in Educational Technology from Beijing Normal University in China. Prior to coming to IU, she worked at Beijing Foreign Studies University in China. Her research interests include online instructional design, open education and MOOCs, and mobile learning. She can be contacted at meinzhu@indiana.edu.

Yunjian Zhao is an editor at China Educational Technology. She got her master degree from Bejing Normal University. Her research interest is educational technology theory and teacher professional development. She can be contacted at zhliang85@163.com.

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, the authors 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.

NOTE: The authors will be presenting a 1-day symposium on "MOOCs and Open Education in the Developing World" at the E-Learn 2017 Conference (Oct. 17-20; Vancouver, BC).

The Role of MOOCs and Open Education

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.

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.

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.

MOOCs and Open Education in the Developing World

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.

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

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.

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.

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

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.

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.

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.

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.

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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References

Allen, E., & Seaman, J. (2014, October) *Opening up the curriculum: Open educational resources in U.S. Higher Education, 2014*. Babson Survey Research Group. Retrieved from http://www.onlinelearningsurvey.com/reports/openingthecurriculum2014.pdf

Baker, F. W. (2017). An alternative approach: Openness in education over the last 100 years. *TechTrends, 61*(2), 130-140.

Bonk, C. J., & Khoo, E. (2014). *Adding some TEC-VARIETY: 100+ activities for motivating and retaining learners online*. OpenWorldBooks.com and Amazon CreateSpace. Retrieved from http://tec-variety.com/

Bonk, C. J., & Lee, M. M. (2017). Motivations, achievements, and challenges of self-directed informal learners in open educational environments and MOOCs**.** *Journal of Learning for Development, 4*(1), 36-57. Retrieved from http://jl4d.org/index.php/ejl4d/article/view/195/188

Bonk, C. J., Lee, M. M., Kou, X., Xu, S. & Sheu, F.-R. (2015). Understanding the self-directed online learning preferences, Goals, Achievements, and Challenges of MIT OpenCourseWare Subscribers. *Educational Technology and Society, 18*(2), 349-368. Retrieved from http://www.ifets.info/journals/18_2/26.pdf

Bonk, C. J., Lee, M. M., & Reynolds, T. H. (Eds.). (2009). *A Special Passage through Asia e-Learning*. Chesapeake, VA: Association for the Advancement of Computing in Education. http://learntechlib.org/p/32264/

Bonk, C. J., Lee, M. M., Reeves, T. C., & Reynolds, T. H. (Eds.). (2015). *MOOCs and open education around the world.* NY: Routledge.

Bonk, C. J., Lee. M. M., Reeves, T. C., & Reynolds, T. H. (2018). The emergence and design of massive open online courses (MOOCs). In R. A. Reiser & J. V. Dempsey (Eds.), *Trends and issues in instructional design and technology* (4th Ed.), (pp. 250-258). New York, NY: Pearson Education. (Note: An early version of this chapter is available from http://www.publicationshare.com/3)

Chuang, I., & Ho, A. D. (2016, December 23). HarvardX and MITx: Four years of open online courses — Fall 2012-Summer 2016. *SSRN*. Retrieved from https://ssrn.com/abstract=2889436 or http://dx.doi.org/10.2139/ssrn.2889436

Green, K. (2016. February 22). Going digital: Faculty perspectives on digital and OER course materials. *The Campus Computing Project*. Retrieved from http://www.campuscomputing.net/goingdigital2016

Lee, M. M., Bonk, C. J., Reynolds, T. H., & Reeves, T. C. (Eds.) (2015). Special Issue: MOOCs and open education. *International Journal on E-Learning*, *14*(3), 261-400. http://learntechlib.org/j/IJEL/v/14/n/3

Reeves, T. C., & Bonk, C. J. (2015). MOOCs: Redirecting the quest for quality higher education for all. In Special Issue: MOOCs and Open Education. *International Journal on E-Learning*, *14*(3), 385-399. http://learntechlib.org/p/150666

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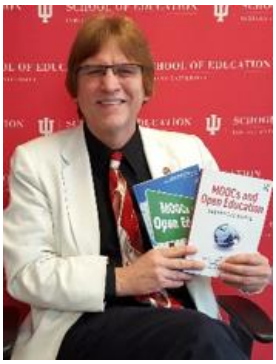
About the Contributors

Details of their 2015 book with Routledge on "MOOCs and Open Education Around the World" can be found at http://moocsbook.com/ and their special journal issue with AACE on this same topic is available here .



Dr. Curtis J. Bonk is Professor at Indiana University teaching psychology and technology courses. Drawing on his background as a corporate controller, CPA, educational psychologist, and instructional technologist, Bonk offers unique insights into the intersection of business, education, psychology, and technology in his popular blog, *TravelinEdMan*. He can be contacted at cjbonk@indiana.edu and his personal homepage is http://php.indiana.edu/~cjbonk/.

Dr. Mimi Miyoung Lee is Professor in the Department of Curriculum and Instruction at the University of Houston (UH). She is co-director of the UH doctoral program in curriculum and instruction focusing on urban education and teaches critical ethnography. She can be contacted at mlee7@uh.edu.

Thomas C. Reeves is a Professor Emeritus of Learning, Design, and Technology in the College of Education at The University of Georgia. His research interests include evaluation, authentic learning, and educational design research. He may be contacted at treeves@uga.edu and his personal webpage is http://www.evaluateitnow.com/.

Thomas H. Reynolds is a professor of Teacher Education at National University in La Jolla, California where he researches design of online learning environments, standards-based online assessment of learning, assessment of online teaching competence, e-learning in Latin America, open education, and MOOCs. He can be contacted at treynold@nu.edu.

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