

## **Massive Open Online Course Instructor Motivations, Innovations, and Designs: Surveys, Interviews, and Course Reviews**

### **Motivations, innovations et conceptions des instructeurs de cours en ligne ouverts à tous : sondages, entrevues et évaluations de cours**

*Meina Zhu, Indiana University*

*Curtis J. Bonk, Indiana University*

*Annisa R. Sari, Yogyakarta State University, Indiana University*

#### **Abstract**

This mixed methods study explores instructor motivations for offering massive open online courses (MOOCs) as well as the instructional innovations used to enhance the MOOC design. The researchers surveyed 143 MOOC instructors worldwide and then interviewed 12 of these instructors via Zoom. They also extensively reviewed the MOOCs of the interviewees. The primary motivations for offering MOOCs included “growth” needs such as curiosity about MOOCs and the exploration of new ways of teaching. In addition, “relatedness” needs of instructors included reaching more people, showcasing research and teaching, marketing their university, integrating interactive technology, and obtaining peer reviews. The perceived instructional innovations of these MOOC instructors included using problem-based learning, service learning in MOOCs, and shortening the length of videos. Overall, these MOOC instructors were satisfied with their MOOC designs.

#### **Résumé**

Cette étude faisant appel à des méthodes mixtes explore les motivations des instructeurs de cours en ligne ouverts à tous ainsi que les innovations pédagogiques utilisées pour améliorer la conception de ces cours. Les chercheurs ont procédé au sondage de 143 instructeurs de cours en ligne ouverts à tous à travers le monde et ont ensuite interviewé 12 de ces instructeurs par l'entremise de Zoom. Ils ont également réalisé un examen approfondi des cours en ligne ouverts à tous des instructeurs interviewés. Les motivations principales pour l'offre de cours en ligne ouverts à tous comprenaient des besoins relatifs à la « croissance », comme la curiosité au sujet de ces cours et l'exploration de nouvelles façons d'enseigner. De plus, les désirs relationnels des instructeurs comprenaient joindre plus de gens, mettre en lumière la recherche et l'enseignement, publiciser leur université, intégrer la technologie interactive et obtenir des évaluations par les pairs. Les innovations pédagogiques perçues par ces instructeurs de cours en ligne ouverts à tous

comprenaient l'utilisation de l'apprentissage par résolution de problèmes, de l'apprentissage par le service dans les cours en ligne ouverts à tous et la durée écourtée des vidéos. Dans l'ensemble, les instructeurs de cours en ligne ouverts à tous étaient satisfaits de leur conception de cours.

## **Introduction**

MOOCs have been offered by a variety of institutions, organizations, and vendors (Veletsianos, Collier, & Schneider, 2015); importantly, the number keeps growing (Bonk, Lee, Reeves, & Reynolds, 2015; Conole, 2015; Shah, 2015, 2016, 2018a, 2018b; Watson et al., 2016). The design of MOOCs can greatly influence learner engagement and interaction, deep and meaningful learning, and participant completion rates (Pappano, 2012; Yousef, Chatti, Schroeder, & Wosnitza, 2015). At the same time, the motivation of instructors can influence their teaching behaviours and efforts (Maehr & Braskamp, 1986; Pelletier, Séguin-Lévesque, & Legault, 2002; Roth, Assor, Kanat-Maymon, & Kaplan, 2007; Wild, Enzle, Nix, & Deci, 1997); however, there is a scarcity of studies specifically focusing on instructor motivation to offer MOOCs (Czerniewicz, Deacon, Glover, & Walji, 2017). There is also a dearth of research on instructional innovations in designing MOOCs and other forms of open education (Bonk et al., 2015; Brouns et al., 2014; Lowenthal & Hodges, 2015; Margaryan, Bianco, & Littlejohn, 2015).

In response, this study explores instructor motivations for offering MOOCs and the design innovations in MOOCs. Among the chief goals is to better understand MOOC design practices and to provide suggestions for future MOOC instructors.

## **Literature Review**

### **MOOCs in Higher Education**

The growth of MOOCs and MOOC participants during the past few years is actually quite staggering. In 2016, for instance, an estimated number of 7,000 MOOCs were offered globally, while MOOC participants increased to over 58 million (Shah, 2015, 2016). In comparison, just 35 million learners enrolled in MOOCs at 500+ universities in 2015 (Shah, 2015); in effect, there was a growth of 23 million MOOC participants in just one year. And MOOC enrollments continue to increase. In fact, recent data from Class Central indicate that in 2018, over 101 million students signed up for more than 11,400 MOOCs offered by more than 900 different universities (Shah, 2019). Such rapid growth begs questions related to what are the key reasons that learners enroll in these MOOCs as well as what motivates instructors to design and deliver MOOCs. We explore the latter question in this paper.

### **Motivations for Offering MOOCs**

Studies have indicated that motivation is associated with human behaviours in a variety of work settings (Deci, Connell, & Ryan, 1989; Deci et al., 2001). In terms of educational environments, the motivation of instructors can influence their course designs and teaching approaches (Pelletier et al., 2002; Roth et al., 2007) as well as their expectations and objectives. Unfortunately, there is a lack of research related to the motivational aspects of instruction (Assor, Kaplan, & Roth, 2002; Reeve, Nix, & Hamm, 2003). In particular, research on the motivation of instructors offering MOOCs and other forms of open education is limited.

Motivation is a state that initiates, guides, and maintains goal-oriented behaviour (Driscoll, 2005). Importantly, it determines whether or not, and the extent to which, an individual engages in an activity (Bandura, 2006; Maehr & Meyer, 1997; Ryan & Deci, 2000; Stage & Williams, 1990). According to need theory, people exhibit different performances based on different needs (Lăzăroiu, 2015). Alderfer (1969) argued that existence, relatedness, and growth (ERG) theory can be used to describe the reasons for individual behaviour. In effect, the ERG model classifies needs into three categories: (1) growth needs (i.e., the development of competence and realization of potential); (2) relatedness needs (i.e., entering into and maintaining satisfactory relations with others); and (3) existence needs (i.e., physical well-being).

In employing such theories, researchers have begun to explore instructor motivations to offer MOOCs (Hew & Cheung, 2014; Hollands & Tirthali, 2014b). The possible motivations for offering MOOCs have included improving educational equality by providing more accessible education and training to huge numbers of learners (Evans & Myrick, 2015; Hollands & Tirthali, 2014b; Jacob, 2013) and a sense of altruism (Evans & Myrick, 2015; Hew & Cheung, 2014; Honeychurch & Draper, 2013). In fact, altruism was found as a common motivational factor for offering MOOCs (Kolowich, 2013b). Importantly, a study from Evans and Myrick (2015) indicates that most MOOC instructors are satisfied with teaching via MOOC platforms and tend to believe that such a massive delivery format can help many students.

The motivations above can be viewed as MOOC instructors' relatedness needs. For growth needs, the motivators have involved a sense of intrigue (Mackness, Mak, & Williams, 2010; Roth, 2013), fostering innovations in teaching and learning (Kolowich, 2013a), and conducting research on teaching and learning (Hollands & Tirthali, 2014b). In terms of innovations in teaching and learning, Hollands and Tirthali (2014b) found that the strategies employed in MOOCs, such as short lectures embedded with questions and automated feedback from the system, are also being used in traditional education.

Given the motivational factors mentioned above, it is not surprising that instructors want to develop their competence in teaching via MOOCs and realize their potential (Hew & Cheung, 2014). In addition to relatedness and growth needs, existence needs are also one of the common motivations for offering MOOCs. Some instructors wanted to gain personal rewards or recognition for teaching MOOCs (Hew & Cheung, 2014; Kolowich, 2013b). Kolowich (2013b), for instance, reported that 39% of the professors in his survey wanted to use MOOCs to raise their visibility among colleagues within their field, and 34% of the survey respondents wanted to be noticed by the media and the general public.

Related to existence needs, another motivational factor for MOOC instructors relates to finding ways to increase an institution's prestige, marketing the university to potential students, improving course and program quality, and so on (Belanger & Thornton, 2013; Czerniewicz et al., 2017). Similarly, a qualitative study of MOOC instructors from Haavind and Sistik-Chandler (2015) found that the primary purpose of MOOCs seems to be for marketing to massive audiences. Similar research is now needed to obtain a better understanding of the complexity of the motivational factors underlying MOOC-based learning environments.

## **Instructional Innovation in MOOC Design**

The pedagogical strategies in each MOOC design varies (Anders, 2015). For example, connectivist MOOCs or “cMOOCs” value the interactions between a massive and highly diverse population of learners, whereas xMOOCs emphasize optimizing the efficiency of instructional delivery mechanisms and intended knowledge acquisition (Mazoue, 2013). However, there are criticisms related to xMOOCs since they tend to formalize the instructional approach with pre-defined learning objectives and assessments, and, hence, are deemed a regressive pedagogical approach (Guàrdia, Maina, & Sangrà, 2013; Hollands & Tirthali, 2014a; Stacey, 2014). At the same time, cMOOCs are criticized since they can overwhelm participants with information and other distractions unrelated or only tangentially related to their intended learning goals and outcomes (Kop, 2011; Mackness et al, 2010). In fact, both cMOOCs and xMOOCs can lead to meaningful learning and instructional innovation (Anders, 2015) as well as to serious problems and difficult challenges.

Despite many research studies focusing on the student experience in MOOCs (Zhu, Sari, & Lee, 2018), comprehensive studies about instructor motivations for offering MOOCs (Evans & Myrick, 2015) and pedagogical innovations in MOOCs are scant. Therefore, this study explores instructor motivations for offering MOOCs and the instructional innovations in MOOCs to better understand MOOC design practices and to provide suggestions for future MOOC instructors. To this end, the following four research questions guided this study.

1. What motivates instructors to offer MOOCs?
2. What instructional innovations do MOOC instructors perceive?
3. What do instructors perceive as the strengths of their MOOCs?
4. How would instructors redesign their MOOCs?

## **Methods**

This study employed a sequential mixed methods design (Creswell & Plano-Clark, 2007) to explore instructor motivations for offering MOOCs and instructional innovations in MOOC design. The data collection methods included: (1) an online survey of 1,400 MOOC instructors from around the world using SurveyMonkey (143 respondents fully completed the survey); (2) interviews with 12 instructors; and (3) extended online course reviews of the prior or current MOOCs of the 12 interviewees. The survey included close-ended items concerning demographic information and MOOC instructors’ motivations for offering MOOCs. The authors used the survey results to help select interviewees and fine-tune the interview questions (see Appendix A). The MOOCs of the interviewees were reviewed to triangulate the interview data and enhance the validity of the study. The researchers validated and cross-checked the results by examining different data sources (Patton, 1990). Research question (RQ) 1 was addressed by survey and interview data. RQ 2 and RQ 3 were supported by interview and MOOC review data. RQ 4 was answered via the interview data.

The survey participants were MOOC instructors who had designed and taught MOOCs using various established platforms. To select the 12 interviewees from the 61 volunteers, the researchers targeted diverse subjects, countries, and MOOC providers. The subjects that these interviewees taught included math, education, public health, computer science, chemistry, and

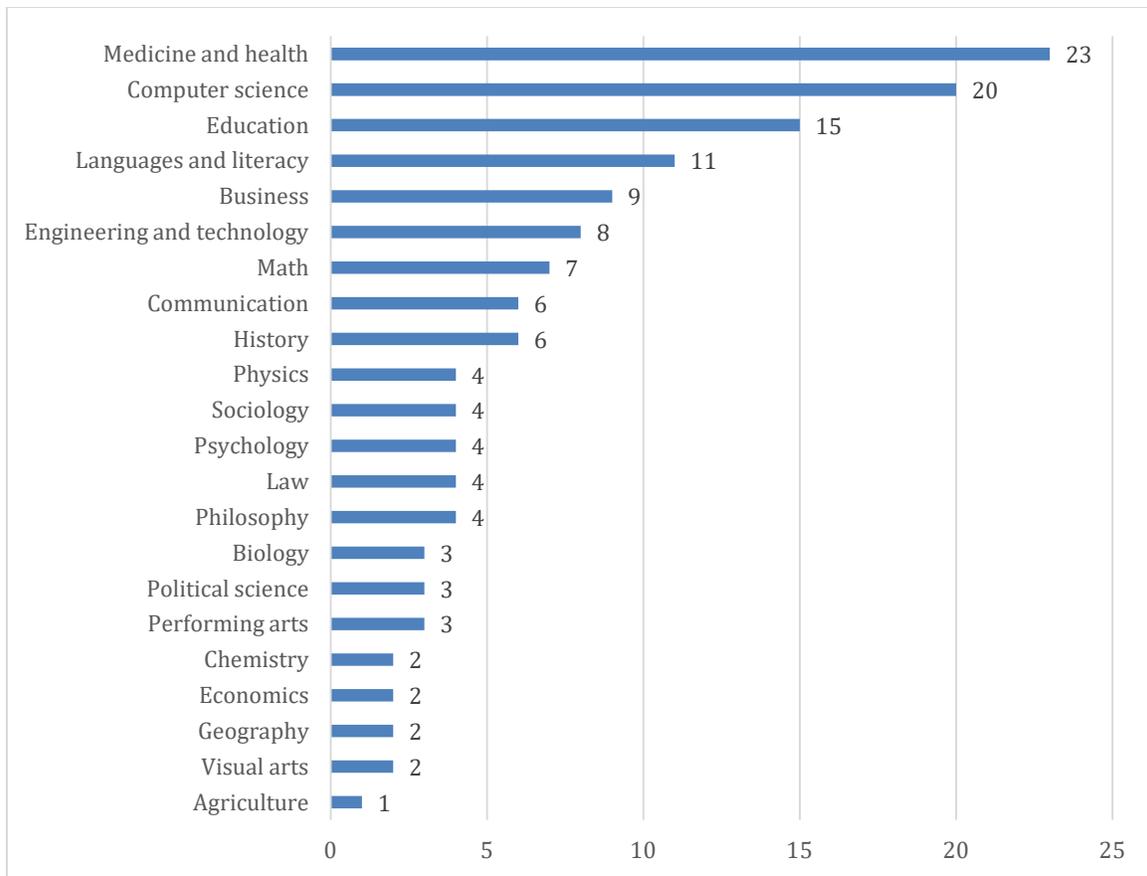
language and literacy. These instructors were from the U.S. ( $n = 4$ ), UK ( $n = 2$ ), China (Mainland and Hong Kong;  $n = 2$ ), Canada ( $n = 1$ ), Australia ( $n = 1$ ), Sweden ( $n = 1$ ), and India ( $n = 1$ ). Their MOOCs were delivered using Coursera ( $n = 6$ ), FutureLearn ( $n = 2$ ), edX ( $n = 2$ ), Canvas ( $n = 1$ ), and Open2study ( $n = 1$ ).

The interviews were transcribed mechanically in Kaltura. Once complete, the authors manually checked the correctness of the transcriptions and revised them. In terms of study validity, first-level member checking was then conducted with the 12 interviewees. Twelve verbatim interview transcripts were sent to the interviewees. Nine interviewees replied to the researchers with minor revisions and the remaining three interviewees claimed that the transcripts matched what they said.

Content analysis methods were utilized to inductively code transcribed interviews and the open-ended questions for emerging themes (Elo & Kyngäs, 2008). To increase reliability, two researchers coded the interview transcripts individually. Next, they discussed any discrepancies while reaching consensus on categories and themes. In terms of the survey data, this study employed descriptive statistics embedded in SurveyMonkey to analyze the results.

## Results

The survey participants ( $N = 143$ ) had diverse subject backgrounds; for example, some of the disciplines represented were medicine and health (16%), computer science (14%), education (11%), language and literacy (8%), business (6%), and engineering (6%; see Figure 1).



*Figure 1.* The subject areas taught by MOOC instructor respondents.

More than half of the survey participants (58%) had designed just one MOOC (see Figure 2). The findings also revealed that 17% of the survey participants had designed two MOOCs, followed by participants (14%) who had previously designed three MOOCs. Interestingly, one in 10 of the survey participants had already designed four or more MOOCs. It is important to point out that each of the 12 interviewees had only designed just one MOOC. Given the relative recency of MOOCs, it was not too surprising that the prior MOOC design experience of these instructors was not extensive.

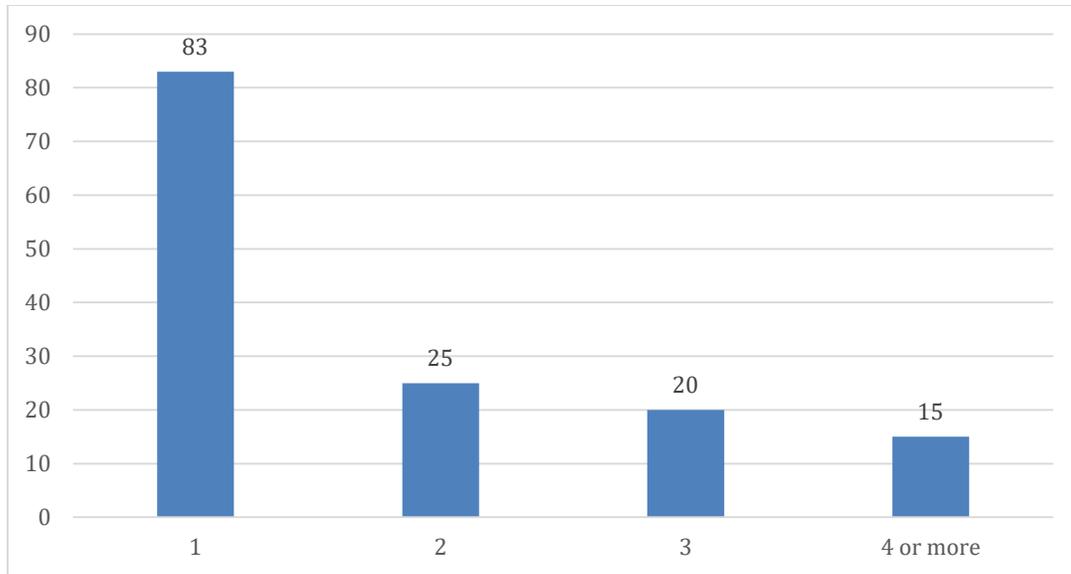


Figure 2. The number of MOOCs the instructor had designed

**Research Question 1. What Motivated Instructors to Offer MOOCs?**

Given that the motivation of offering MOOCs may be related to the final design, this study classified interviewees’ motivations into three categories: (1) growth needs; (2) relatedness needs; and (3) existence needs (Alderfer, 1969). Both the survey and the interview results showed that the primary growth needs included curiosity about MOOCs, interest in nontraditional ways of teaching, experimentation with MOOCs, and learning about the course design from the MOOC experience. In addition, their relatedness needs included reaching more people, democratizing education, showcasing one’s research and teaching, marketing their university, and building their personal reputation. Finally, existence needs were embedded in requests by one’s university to offer MOOCs.

The survey shows that most of the MOOC instructors had growth needs and relatedness needs. For example, 102 out of 139 of the survey respondents (73%) would like to experience teaching and connect to a large and diverse audience throughout the world (see Figure 3). In addition, 101 of these instructors (73%) expressed interest in exploring innovations in online teaching and learning. The above two motivations are all for growth needs such as improving their teaching skills. Following growth needs, the second most mentioned motivations concerned relatedness needs. For instance, of interest, 93 (70%) of these instructors wanted to increase learners’ access to higher education worldwide, while 83 (60%) of them hoped to build their institutional reputation. Finally, existence needs were also mentioned by the survey participants. In fact, 59 (42%) of these instructors wanted to enhance their personal reputation by teaching a MOOC. Additionally, two survey participants were motivated to offer MOOCs due to the possibility to help them obtain tenure in their current job.

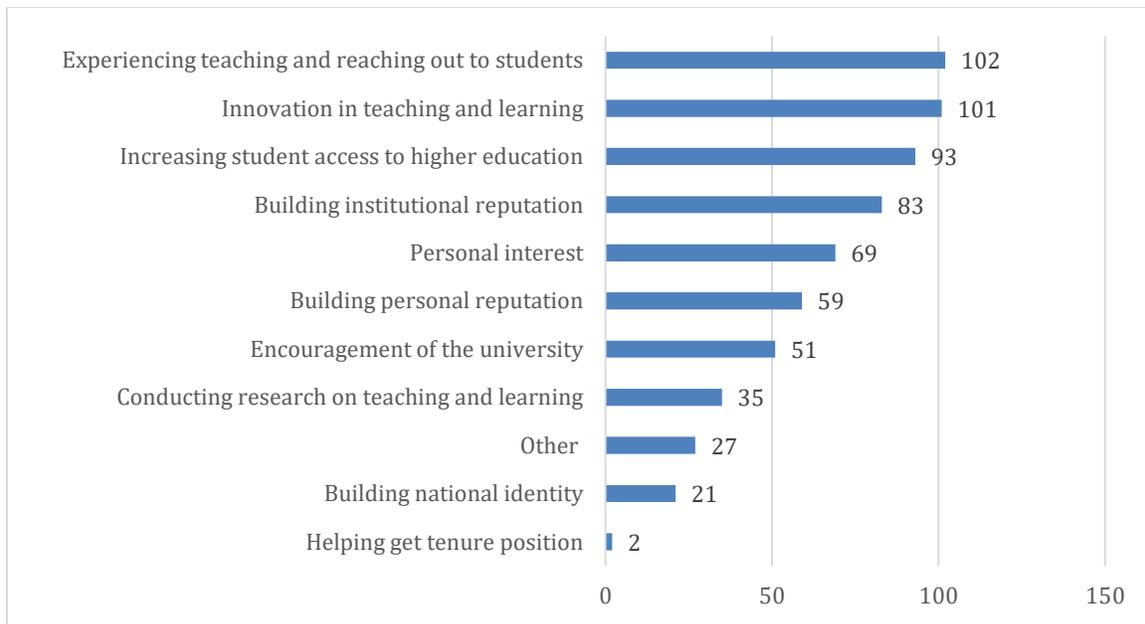


Figure 3. Motivational factors of instructors for offering MOOCs.

The interview results paralleled the survey data. Among these interview participant motivations, the most often mentioned were growth needs. For instance, all MOOC instructors who were interviewed mentioned that they were curious about MOOCs and wanted to experience instructional innovation with MOOCs. As one instructor from Canada mentioned:

I'm always interested in how you can provide a deep learning experience in untraditional ways. So, when MOOCs came over, I didn't always understand it really well...I thought the best way to understand what was going on was to jump in. So, more curiosity and wanting to learn about the world of MOOC.

Relatedness needs, which, as mentioned above, included extending the course to reach a wider audience, putting one's research and teaching on display, marketing their institution, integrating interactive technology, and obtaining peer reviews, also motivated instructors to offer MOOCs. One of the motivations that some of these instructors felt was to reach more students and democratize education. An instructor who taught a MOOC on psychology explained, "The other thing that was really tempting was that there may be many students there [i.e., in their MOOC] because of a lack of funds or because of geography where they happen to live where [they] do not have access to the education they would like."

Similarly, one computer science instructor from Sweden mentioned:

I've been teaching graduate-level the program for the past twenty years. And this led to my desire actually to go to [the] subject matter of this conversation [namely] MOOCs. I felt that after so many years I got a lot of experience in how you pedagogically best teach this material. In fact, I also wrote a textbook. That is, of course, [a book] that summarizes our way of teaching Computer Architecture and then I was very motivated to give MOOC. So, over the past year I have developed

two MOOCs. So, it was a lot of work, but I had a lot of fun really. It is really worth it.

One instructor from the U.S., who originally was attempting to help his own face-to-face students, resulted in creating a MOOC. As he revealed, “The initial motivation was to make some video resources for my own students. And then I found out about Coursera.”

Another instructor from the U.S. mentioned, “It is a good way of exposing your university to a broader world than would have been otherwise.”

## **Research Question 2. What Instructional Innovations do MOOC Instructors Perceive?**

Just as MOOCs are quite different from face-to-face or traditional online classes, instructor perceptions about their instructional innovations in MOOCs are also different. The innovations in MOOCs identified through MOOC instructor interviews and the review of the MOOC course content consisted of two types: (1) Innovation compared to traditional classroom education, and (2) innovation compared to other MOOCs. Items in both of these areas of innovation include innovation in instructional strategies and technology use.

In the first category, instructional innovations that MOOC instructors in this particular study identified as somewhat common (such as peer review for task assessments and grading and the segmenting of videos into shorter units or chunks) might not be as prevalent in most traditional classroom situations or smaller scale courses. Importantly, a research study on peer-grading in a MOOC from Coursera showed that it can be as effective and consistent as instructor grading (Luo, Robinson, & Park, 2014). However, given the diverse background of MOOC students, peer grading faces different challenges such as the quality and acceptability of peer feedback (Kolowich, 2013b; Meek, Blakemore, & Marks, 2017)

In the second category, some instructional approaches mentioned during our instructor interviews that might be deemed innovative in MOOCs such as problem-based learning (PBL), project-based learning (Kim & Chung, 2015; Robin & McNeil, 2015), service learning, and integrating interactive media might also be used in traditional face-to-face classroom settings. PBL refers to a pedagogy that encourages students to generate or locate solutions to pressing issues, challenges, or problems, wherein the learners negotiate and present their solutions collaboratively (Brush & Saye, 2008; Hannafin, Hill, & Land, 1997; Hmelo-Silver, Duncan, & Chinn, 2007). However, approaches like PBL and service learning are highly unique and innovative in terms of MOOCs when considering the separation of time and space between MOOC instructors and their students as well as the time commitments and coordination required for approaches like PBL. MOOC instructors must also contend with various technology limitations and constraints of their international participants.

Still other instructional approaches like traveling to other countries and holding “office hours” with MOOC participants in cafes and hotel lobbies (Severance, 2015), collecting student voices and MOOC experiences via video in a class YouTube channel (Severance, 2015), and creating social spaces for student volunteerism to emerge to translate content to other languages for those in developing regions of the world (Kim & Chung, 2015) might be unique to MOOC

environments; however they are infrequently employed at this time. In fact, no one that we interviewed in this particular study mentioned using any of these particular approaches.

In terms of our specific findings related to innovation in the MOOC courses, during the interview sessions, three MOOC instructors mentioned that peer evaluation and short videos in MOOCs were among their key instructional innovations. In addition, of the interviewee MOOCs that the researchers reviewed, all 12 had incorporated short videos and seven of them had adopted peer evaluation. Despite such commonalities across the dozen MOOCs reviewed, it was obvious that MOOC instructors' perceptions about innovation in this study were highly varied. A potentially transformative result was to force these MOOC instructors to think differently about their specific instructional strategies and approaches as well as rethink their overall philosophy of teaching and learning. In fact, as seen in several quotes below, such differences inspired some MOOC instructors that we interviewed to reflect on their daily teaching practices in traditional classroom settings.

As noted in the following quote, one MOOC instructor from Canada stated that the use of short learning units in MOOCs are innovative:

In the sense of, like I told you earlier, not only teaching for fifteen minutes, but they very much push you that those fifteen minutes have to have an end. So at the end of the fifteen minutes, you can't just say: "we'll continue this next lecture." So, for me, I think that was an innovative way to try to present this material, to present a small bite sized, standing alone chunks. That has helped me teach in other situations as well. I think that's an innovation that MOOCs have brought.

Aligned with the MOOC instructor from Canada's thoughts, mentioned above, another instructor mentioned:

To think differently [about] why we stand in front of a classroom for an hour and believe it's something useful to students. There are much different ways of educating and I think we're only just beginning to understand this. One of the things that I learned teaching face-to-face is not what you tell the students and what you have done [in the classroom]. It's getting them to fill in the gaps.

In terms of innovations compared to other MOOCs, two instructors claimed that problem-based learning or project-based learning in their MOOCs was an instructional innovation. One instructor from the field of education stated: "I think it is the problem-based learning. It's sort of, out-of-the-classroom learning, having them go out and do the assignment at their house, in their backyard, or on their sidewalk. So, it automatically is integrated into their everyday life."

The MOOC review results further verified the interviewee's statements. The MOOC instructors asked students to find problems around their life and engage in authentic activities to solve them. These methods encouraged students to share their solutions with their MOOC peers.

Similarly, another instructor had learners connect their learning with real life tasks by using a service learning strategy. This instructor also added: "And so just from a service learning standpoint, I do think that's a unique aspect of a MOOC." The MOOC review supported her

statement. She asked MOOC students to work on the problems that people faced in real situations. In effect, MOOC students had an opportunity to work on authentic problems.

### **Research Question 3. What do Instructors Perceive as the Strengths of Their MOOCs?**

Each of the 12 MOOCs had a unique strength. Some strengths included the pedagogical methods, the topic itself, and the impact of MOOCs. Such pedagogical strengths might help engage MOOC participants such as embedding humour and designing psychologically safe and comfortable learning environments. Through reviewing the MOOCs of these dozen instructors as well as interviewing them, we found that these were generally humorous, friendly, and engaging learning environments. As the following quote indicates, one interviewee from Canada claimed that the strengths of his course was in making it informal and humorous.

This is nothing I try to do but I have some comfortable, smile that makes it feel like we're having an informal discussion... A lot of the people that I get emails from say: "I love the way you teach. I love the comfortable level, feels like we've been friends. You're welcome to my kitchen anytime." I don't know what that is. It's just an interpersonal style thing that seems to work in this medium for whatever reason. You know it's so cold looking at your computer which is a technology that I am going to let humanity comes through that can be really important.

One instructor from the U.K., whose targeted audience was students who wanted to be a dentist in the future, mentioned the power of connecting people with diverse backgrounds to be a key strength of his MOOCs. He emphasized that students who want to be a dentist can connect with students who are dental patients in MOOCs. As he stated:

People who are dental patients talk about their experiences of being patients to people they might want to be a dentist. And this is unique... I think that's its reason for bringing this mixture of people together to have a conversation. It's very powerful.

In terms of content, in general, these instructors perceived their MOOC topic as interesting. For instance, one instructor mentioned: "So some of the strength is its accessible and interesting math. Even if you have a Ph.D. in engineering or something else, you'll find it's interesting. The material has intrinsic interest."

Besides pedagogical strength and interesting topic as strengths mentioned above, the potentially substantial and wide impact of the MOOCs was also considered a strength. One instructor from Australia noted that:

It reaches out to a wide range of people. When I first run the MOOC, I was really interested to know who signed up for it. And this was on the bulletin board, [where] they were introducing themselves. It was about five hundred students. That's about the average size for these open study programs. It engaged a wide range of people.

#### **Research Question 4. How Would They Redesign the MOOC?**

During the interview, we asked MOOC instructors if they had an opportunity to redesign their MOOC, what they would do to improve the previous or current version of their MOOC. These 12 MOOC instructors had various ideas. Overall, during the interview, MOOC instructors were satisfied with the current course, especially with the structure. Regarding redesigning their MOOC, one instructor emphatically stated: “Actually no. I'm quite happy with it and we've had good feedback from learners.” Such instructors indicated that they might make minor changes. Their suggestions for redesigning their MOOCs included using learning analytics before redesigning, making the length of the MOOC shorter, and increasing instructor-student and peer-to-peer interaction. Other course redesign ideas included cancelling peer-grading, adjusting the difficulty of quizzes, adding lab experiences, inviting guest speakers, adding international perspectives, and having session-based MOOCs. These suggestions show that MOOC instructors value student-centred pedagogy and would like to obtain suggestions from MOOC students. For instance, before they would redesign their MOOCs, two MOOC instructors would like to use learning analytics to discover areas in need of improvement. As one instructor from Sweden explained:

When I do the revision, I will for sure look at the detailed statistics...For example, you can get statistics on how much they rewind. That would be a sign that there is something that is not clearly explained. They have to listen to it again and again and then they get there.

Similarly, one professor from Australia talked about redesigning his course by obtaining input from students to engage students.

I would use a participatory and engagement approach as one of the key activities. To do that we might make the outcome of that useful to the student. I would structure that to add some products and work that has been attributed by fellow students, adding input from other students, asking them to moderate as academics, but that would give them [students] part of a portfolio ...If we had micro credentialing sorted it out, I would present that as part of the micro credentialing experience. Those are some specific ideas for a totally different MOOC.

The MOOC instructor from India would like to bring more perspectives in his course if he redesigns his course. He stated:

Obviously, there is space for improvement. For example, I can bring [a] guest speaker to talk about the challenges of organizational design. And my MOOC has too much [of] my talking, and do not have lot of other people talking. I may bring in some guest speaker to give students some context. That was one of my plan.

#### **Discussion and Significance of this Study**

This study tapped into the motivations, designs, and pedagogical innovations of 143 MOOC instructors who were part of a unique database of over 1,400 MOOC instructors from around the world. In addition to their survey data, the actual course contents of 12 of these

instructors was further examined. After exploring their course contents and resources, these dozen MOOC instructors were interviewed about their course designs, challenges, and motivations for offering MOOCs. Several interesting and important results were revealed.

As mentioned in the results section, growth and relatedness needs were the primary instructor motivations for offering MOOCs. In effect, these instructors disclosed intrinsic over extrinsic reasons for offering MOOCs. More specifically, growth needs included curiosity about MOOCs and the exploration of new ways of teaching; such findings align well with previous research from Hew and Cheung (2014). In addition, in similarity to the findings of Belanger and Thornton (2013) as well as Hollands and Tirthali (2014b), the “relatedness needs” found in the present study included reaching more people, showing off research and teaching, and advertising one’s university.

Various MOOC strengths and pedagogical innovations were mentioned by the interviewees. Some instructors used PBL or service learning, whereas others considered integrating interactive media in MOOCs and peer review as an innovation due to its rarity in traditional classroom instruction. Overall, the instructors interviewed were satisfied with the designs of their MOOCs. If they could redesign the MOOC, some might use learning analytics to help with decision making, whereas others suggested shortening the course, increasing learner interactions, or revising the methods of assessments.

This study provides key insights into instructors’ motivations for offering MOOCs as well as instructional innovations in MOOC design. The results may inform MOOC stakeholders of how to foster instructor motivation and instructional innovation in MOOCs. Institutions and organizations strategically planning to offer MOOCs might attempt to motivate potential MOOC instructors to design and develop MOOCs through rousing their growth needs and relatedness needs. For example, administrators might encourage instructors in their institutions and organizations to offer MOOCs by explaining the potential of MOOCs to reach out to tens of thousands of learners around the globe as well as the opportunity to experiment and innovate with their instruction. Per our findings, most of MOOC instructors in this study were motivated by experiencing a new instructional delivery system as well as by the chance to pilot novel teaching approaches and strategies. Another means to elevate MOOC instructor motivation might come from technical and human resources such as learning analytics to support MOOC instructors’ innovative teaching and research. Finally, MOOC instructors might be motivated by the potential to adopt findings of the instructional innovations in their future MOOCs and perhaps in smaller scale courses that they plan to teach.

For MOOC instructors and instructional designers, the MOOC innovations and redesign strategies found in the current study offer some insights for their future MOOC design and teaching. For instance, other MOOC instructors might experiment with forms of service learning and PBL.

### **Limitations**

It is important to document the study limitations as a means to qualify one’s findings and help future researchers in this area of MOOC instructor motivation and design. First, information on the MOOC course and instructor were collected from the websites of MOOC vendors such as

Coursera, FutureLearn, and edX, as well as from MOOC instructor lists such as Class Central. Some MOOC platforms were not included in this data collection. Second, the instructors in this study primarily delivered their MOOCs in English, though there were also some Korean MOOCs in our sample. In effect, thousands of MOOC instructors whose MOOCs were delivered in languages other than English were excluded from this study. Third, the study employed an opt-in approach to both the surveys and the interviews. It is plausible that the participants who volunteered to participate in this study were more favourable toward MOOC instructional design and pedagogy than those who did not respond to the survey or agree to be interviewed. In addition, although the 10% response rate is acceptable given the survey was an opt-in survey for MOOC instructors (Cho & LaRose, 1999), higher response rates would allow for a more comprehensive picture of instructor motivation for designing and delivering MOOCs.

Another limitation is that we did not design a specific scale or instrument related to MOOC instructor motivation nor did we actively observe MOOC instructors in any live or synchronous sessions with their participants. Along these same lines, we did not analyze the course contents and discussions forums for specific motivational elements.

### **Implications and Future Research**

Much can be done to build on the present study. For instance, the survey items only addressed MOOC instructors' general motivation for offering MOOCs. Consequently, in the future, researchers might develop more specific motivation metrics to measure MOOC instructors' motivation. Second, while each interview was rich in data, the qualitative data of this study was limited to 12 MOOC instructors. In turn, future research might involve dozens of MOOC instructors to attempt to provide a more comprehensive picture of MOOC instructor motivations, designs, and innovations. Third, future research could assemble several focus groups of MOOC instructors to verify the present findings and recommendations. Their retrospective insights would likely prove highly informative and pedagogically impactful.

There are myriad other gaps in the research literature concerning motivation to design or offer MOOCs. As an example, in building on this exploratory examination into MOOC instructor motivations, designs, and innovations, a follow-up study might more deeply investigate how different existence, relatedness, and growth motivations influence MOOC instructors' design and innovations. Still other researchers might investigate how different types of MOOCs—xMOOCs, cMOOCs, pMOOCs, hybrid MOOCs, etc.—foster distinct forms of instructor, as well as learner, motivation. In addition, researchers might want to better understand the stability of MOOC instructor motivation to offer MOOCs. For instance, does much of the motivation to design and deliver MOOCs boil down to the novelty factor which dissipates over time? Along these same lines, researchers and policy makers might want to know what aspects of MOOCs they should highlight or incentivize as a means to encourage more hesitant or reluctant instructors to design or deliver a MOOC.

### **Final Comments**

This study was unique in collecting and analyzing data from 143 MOOC instructors using several different popular MOOC platforms, from many different countries and disciplines, about their motivations for offering MOOCs as well as their deemed pedagogical innovations

and overall course designs. It is conceivable that the initial enrollments of the MOOCs for these 143 instructors was well over a million total participants. Hence, the global impact of the courses involved in this study necessitates that researchers and educators make attempts to better understand instructor, as well as learner, motivational factors and experiences.

Adding to this importance, the trend toward openness and global accessibility in course delivery is likely to increase in the coming decades. As mentioned earlier, the number of people enrolling in MOOCs has drastically increased during the past few years (Shah, 2018). Better understanding of motivational aspects of MOOCs can pay huge dividends in terms of not only the design and delivery of MOOCs, but in the resulting educational skills and competencies of the participants.

This study offered one glimpse into the factors that motivate instructors to offer their MOOCs. It also offered a window into what they deem to be innovations in their course designs. Such innovations are intended to motivate and engage those who enroll in their MOOCs as well as potential participants. At the same time, this study offers a chance for educators and instructional designers to consider the motivational tendencies of MOOC instructors and students when developing new MOOCs or enhancing existing ones. Simply put, a key goal of this study is to help others find strategies and methods that might help them recruit and train future MOOC instructors, as well as discover useful ideas for the design of such MOOCs for learner interaction and engagement. Of course, much more needs to be done.

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**Appendix A: Template for Semi-structured Interview Questions**

1. Please introduce yourself briefly.
2. What motivated or prompted you to offer MOOCs?
3. How might the motivations be different now in offering an additional MOOC?
4. Could you please tell us your experiences of designing and developing MOOCs?
5. What was unexpected? What was critical that others might want to think about?
6. Could you please tell us your experiences of delivering MOOCs?
7. Were there any special or significant moments that stuck out?
8. What kind of activities/tasks do use for your MOOCs?
9. What were pedagogical or instructional innovations that you tried out in your most recent MOOC, if anything (i.e., what was new or different)?
10. What new activities or resources might you try to employ next time? Is there anything unique or highly creative in mind?
11. What do you think are the strengths or important aspects of your MOOCs?
12. What kind of challenges and obstacles did you face when you designed MOOCs?
13. What did you do to solve these problems or challenges?
14. What would you modify, change, add, or delete if you have a chance to redesign this MOOC?

## Authors

Meina Zhu is a doctoral candidate in the Instructional Systems Technology program with a minor in Human-Computer Interaction Design at Indiana University. Her research interests include online education, MOOCs, self-directed learning, STEM education, and active learning. Email: [meinzh@iu.edu](mailto:meinzh@iu.edu)

Curt Bonk (<http://curtbonk.com/>) is Professor of Instructional Systems Technology at Indiana University and a former CPA and educational psychologist. His blog is “TravelinEdMan” and his books include, *The World Is Open*, *Empowering Online Learning*, *The Handbook of Blended Learning*, *Electronic Collaborators*, *Adding Some TEC-VARIETY* (free as an eBook at <http://tec-variety.com/>), and *MOOCs and Open Education Around the World*. Email: [cjbonk@indiana.edu](mailto:cjbonk@indiana.edu)

Annisa Sari is a fourth-year doctoral student in the Instructional Systems Technology program at Indiana University Bloomington, and a lecturer in Accounting Education department at Yogyakarta State University, Indonesia. Her main research interest are within the scope of online learning, and accounting education. Email: [annisa@uny.ac.id](mailto:annisa@uny.ac.id)



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