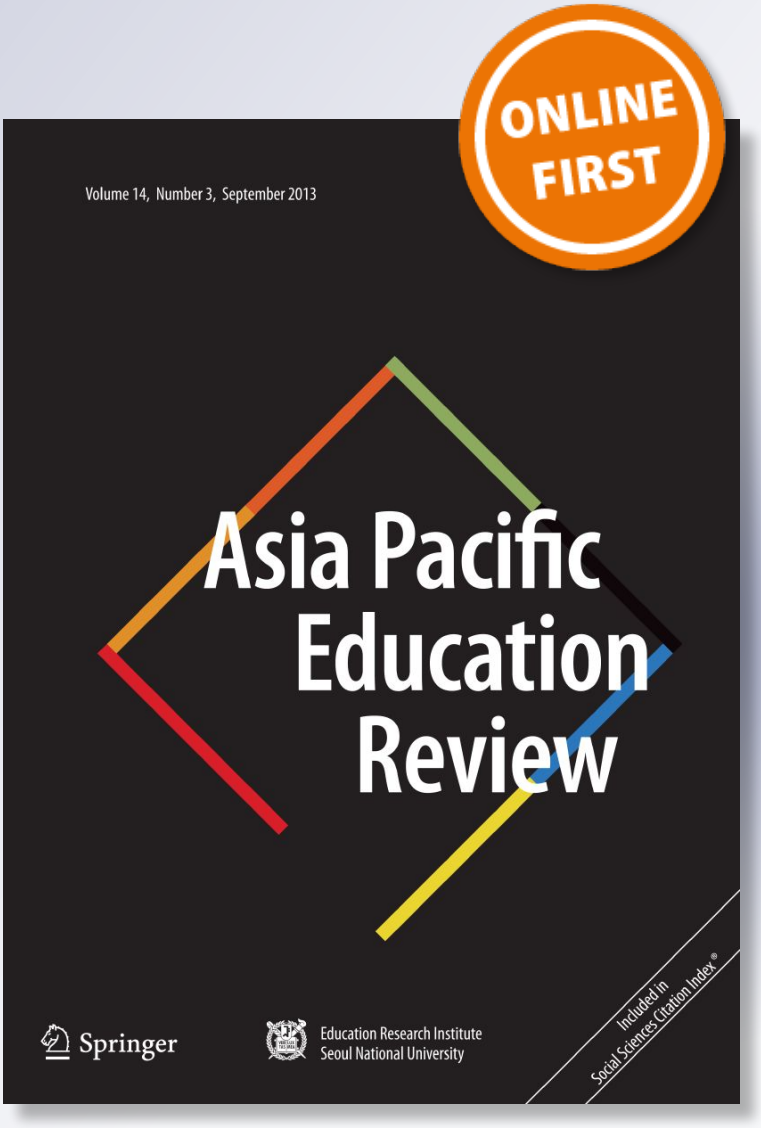
MOOC instructor designs and challenges: what can be learned from existing MOOCs in Indonesia and Malaysia?

Annisa R. Sari, Curtis J. Bonk & Meina Zhu

Asia Pacific Education Review

ISSN 1598-1037

Asia Pacific Educ. Rev.
DOI 10.1007/s12564-019-09618-9



Springer

Asia Pacific Education Review
https://doi.org/10.1007/s12564-019-09618-9

MOOC instructor designs and challenges: what can be learned from existing MOOCs in Indonesia and Malaysia?

Annisa R. Sari[1,3] · **Curtis J. Bonk**[1] · **Meina Zhu**[2]

Received: 22 September 2018 / Revised: 25 July 2019 / Accepted: 30 August 2019

Abstract
The purpose of this study was to explore Indonesian and Malaysian instructors' perceptions of massive open online course (MOOC) design and how they deal with the design challenges. Surveys, email interviews, and course reviews are the main data-collection methods employed in this sequential mixed methods study. Forty-six instructors participated in the survey, and nine of them voluntarily participated in an email interview. The findings revealed that half of the courses were delivered using a hybrid/blended type of MOOC. Personal motives, institutional encouragement, and altruism were among the main reasons for instructors to offer MOOCs. Preparation, attraction, participation, and assessment were the categories used to explain the design strategies used by these instructors in designing their courses. The survey also revealed that collaboration encouragement, participant engagement, video development, and time constraints were the primary design challenges that the instructors experienced during the design process. Furthermore, most instructors sought advice from other MOOC instructors, MOOC providers, their institutions, video tutorials, and open educational resources (OERs) to surmount their design challenges.

Keywords Massive open online course (MOOC) · MOOC instructors · Course design · Design strategies · Design challenges

Introduction

Learning is an essential part in human life starting from infant years to adulthood, and can take place in formal, informal, and nonformal settings. In the recent decades, many aspects of human learning have been dramatically altered and transformed (Bonk 2016). The factors underpinning these shifts in learning are due to various reasons, including the rapid development of the Internet and learning technology, the birth of a new generation of learners, and the shifting of teaching methods toward more learner-centered approaches (Ertmer and Newby 2013; Thomas and Brown 2011). Massive open online courses (MOOCs) are one of the more salient phenomena in the midst of this recent shift in learning environments.

The expansion of online learning with open educational resources (OERs) and open course ware (OCW) in the first decade of this century (Carson 2009; Caswell et al. 2008; Iiyoshi and Kumar 2008; MIT 2007, 2012; Vest 2001) help fuel the creation and expansion of MOOCs during the second decade (Bonk and Lee 2017; Alevizou 2015). During 2018 alone, 101 million people enrolled in over 11,400 MOOCs at more than 900 universities around the globe (Shah 2019); this was an increase of 20 million enrollments and an additional 2000 MOOCs from the previous year (Shah 2017). Such trends show no signs of abating.

As MOOCs have attracted attention, they have been increasingly designed and offered by countries outside the United States and Europe (e.g., Mesquita et al. 2014; Oyo and Kalema 2014; Trehan et al. 2017; Yamada 2015; Ying 2015), including Southeast Asian countries (Yamada 2015)

✉ Annisa R. Sari
annisa@uny.ac.id

Curtis J. Bonk
cjbonk@indiana.edu

Meina Zhu
meinazhu@wayne.edu

[1] Instructional Systems Technology Department, Indiana University Bloomington, Bloomington, USA

[2] Learning Design and Technology Program, College of Education, Wayne State University, Detroit, USA

[3] Accounting Education Department, Yogyakarta State University, Yogyakarta, Indonesia

Published online: 17 September 2019

such as Malaysia and Indonesia (Fadzil et al. 2015; Ghazali and Nordin 2017; Hartono 2017) and other parts of the Global South (Zhang, Bonk, Reeves, & Reynolds, in press). According to World Bank data, Indonesia is the fourth largest nation in the world and the first largest in the Southeast Asian region by its population numbers (2019). As a result, Indonesia has a huge potential for benefitting from MOOCs and other forms of open education (Belawati, in press). At the same time, Indonesia and Malaysia share many aspects of their culture and language (Azhari 2014). Hence, it is interesting to know how MOOC development takes place in these two countries, both separately as well as across the two countries.

The first MOOC in Malaysia, for instance, was introduced in 2014 (Fadzil et al. 2015; Ghazali and Nordin 2017). Not too surprisingly, the growth of MOOCs in Malaysia has led to the increasing research attention related to Malaysian MOOCs (e.g., Al-Atabi and DeBoer 2014; Ayub and Leong 2017; Dahlan et al. 2015; Nordin et al. 2016). More research and understanding is also needed in regards to Indonesian MOOCs considering it is quite new (Firmansyah and Timmis 2016; Hartono 2017).

Due to the variety of participant characteristics of MOOCs (Cross 2013; Liyanagunawardena et al. 2014; Neuböck et al. 2015; Zutshi et al. 2013), some researchers have investigated how course developers and other instructional design personnel construct their MOOCs (e.g., Berkovsky et al. 2008). For instance, Mak et al. (2010) detailed the confusion and frustration of learners in the early weeks of a MOOC. They also documented how the instructor intended to solve the problem by sending a daily newsletter summarizing the ongoing conversation in the course. While interesting, the study of MOOC instructors by Mak et al. (2010) is the exception and not the norm. In fact, a study of MOOCs research articles published between 2014 and 2016 showed that instructor-focused research is the least-studied area (3.4%) after student-focused, design-focused, and context- and impact-focused research (Bonk et al. 2018b). Simply put, there is a dearth of research investigating instructor-related aspects of MOOCs, particularly related to MOOC course design.

Based on these reasons, we conducted a study to explore how instructors designed their MOOC courses as well as the challenges that the instructors encountered in their design. In particular, we focused on Indonesian and Malaysian MOOCs due to the scarcity of MOOC research in Southeast Asia as well as the fact that MOOCs were recently a key part of strategic government initiatives in both Malaysia and Indonesia (Abas 2015). Accordingly, it is hoped that this study will be beneficial to stakeholders in both Indonesia and Malaysia and help them better understand how MOOCs are designed and implemented in those countries. To guide such efforts, we offer suggestions for future MOOC instructors, instructional designers, and institutions as to effective MOOC design techniques and considerations. Specifically, this study will enrich the field of instructional design and technology with the perspective of online instructional design in developing countries. Given that generalizations from any one study are limited, the researchers hope that it will inspire additional research in this area.

Literature review

The definition and progress of MOOCs

The rapid growth of information and communications technology has provided many new delivery methods for learning (Ertmer and Newby 2013; Thomas and Brown 2011). Among these methods include online learning, blended learning, MOOCs, podcasting, OER, OCW, and flipped classrooms. MOOCs provide on-demand access to free higher educational courses for people around the world. Some MOOCs are synchronous, whereas others are reliant on asynchronous forms of communication (e.g., Li et al. 2014; McAuley et al. 2010). The most appealing characteristic of MOOCs may be that many of these free or low-cost courses have been offered by highly prestigious and expensive universities like MIT, Stanford, Harvard, and the University of California at Berkeley (Liyanagunawardena 2015). As such, researchers in Southeast Asia like Abas (2015) have suggested that MOOCs provide unique educational opportunities and a means to move toward greater equality in education. With MOOCs, people have the opportunity to access education at anytime from anywhere while paying vastly lower, if any, fees.

A MOOC has been characterized as an online course which is open to anyone at any time, who has the requisite Internet access and self-motivation to enroll and participate in it (Israel 2015; Jordan 2014; Liyanagunawardena et al. 2013; Veletsianos et al. 2015). From a pedagogical standpoint, currently there are three common types of MOOCs: cMOOCs, xMOOCs, and pMOOCs (Haavind and Sistek-Chandler 2015). cMOOCs place emphasis on nurturing better social interaction through the sharing and negotiation of meaning among the participants. Particularly, this type of MOOCs added contents and experiences created by its learners as a way to accommodate constructive and collaborative learning (Terras and Ramsay 2015). In contrast, xMOOCs are built on a more traditional model of instruction and arise to deliver learning materials to masses of participants with the hope of promoting equal educational opportunities. Thus, xMOOCs usually consist of short videos and short quizzes as a follow-up to assess learners' understanding (Terras and Ramsay 2015), and lean on a behavioristic pedagogical approach (Guàrdia et al. 2013). Third, pMOOCs

highlight the opportunities for participants to engage in online collaboration for a project or to engage in some types of problem solving (Kim and Chung 2015).

Other studies have categorized MOOCs pedagogy into five types: cMOOC, xMOOC, pMOOC, hMOOC, and mMOOC (Haavind and Sistek-Chandler 2015). The term hMOOC refers to hybrid MOOC in which the MOOC course is being combined with a face-to-face class, whereas a mMOOC refers to mini-MOOC because the enrollment size is smaller than 500 participants (Haavind and Sistek-Chandler 2015).

MOOCs in Indonesia and Malaysia

Abas explained that Indonesia, Malaysia, Singapore, Thailand, and the Philippines have begun to launch MOOCs, but the MOOCs in Indonesia and Malaysia are part of key "strategic government initiatives" (2015, p. 233). Given that the number of Internet users in Indonesia in 2016 was 132 million out of 263 million, and that only 30% of Indonesian school graduates could enroll in higher education at that time (Abas 2015), Indonesia is ideally situated, at least in theory, to capitalize on online and distance learning opportunities such as found in MOOCs and MOOC-like derivatives (Firmansyah and Timmis 2016). In addition, the potential of MOOCs which help people afford education at anytime from anywhere by paying lower tuition or no tuition fee at all is a major factor in the development and growth of MOOC courses in Indonesia.

Historically speaking, the first MOOC in Indonesia was offered by Ciputra University in 2013 (Belawati, in press; Hewindati and Belawati 2017), followed by MOOC Universita Terbuka, and MOOCs from five higher educational institutions coordinated by the Ministry of Education and Culture (Abas 2015; Pannen 2015). Other organizations and institutions offering MOOCs in Indonesia include the Open University, Gadjah Mada Unversity, University of Indonesia, IndonesiaX, the Center for Indonesian Policy Studies, and @america.

In a study of Indonesian MOOCs, Firmansyah and Timmis (2016) stated that although some research had indicated that MOOCs can serve as a supplement to current higher educational practices, it appears that the development of MOOCs in Indonesia is still highly limited. As alluded to earlier, given that the number of Indonesian MOOCs remains low, the movement has much potential to grow. Therefore, research on Indonesian MOOCs at this time might prove particularly timely and informative.

Similar to the MOOC situation in Indonesia, Malaysia's first MOOCs piloted by Taylor University were also in late 2013, and then followed by four public universities offering MOOC courses (Ghazali and Nordin 2017). Considering the potential benefit of MOOCs within education, the Malaysian government made national plans related to MOOCs in order to support their use in higher education (Fadzil et al., 2015; Ravichandran, in press). In fact, Ghazali and Nordin (2017) stated that

> MOOC development in Malaysia is in tandem with several important national plans such as the National Economic Model, Economic Transformation Program, the upcoming 11th Malaysia Plan (2016–2020) and the Malaysian Education Blueprint for Higher Education (2015–2025) (p. 52).

According to the Ministry of Higher Education's (MOHE) blueprint on higher education, MOOCs will be developed to support higher education as part of a globalized online learning shift (Ismail and Seng 2016). Furthermore, Ismail and Seng (2016) stated that MOOCs are used to increase the market value of Malaysian universities' graduates. Aligned to the previous statement which can be found on the MOHE's blueprint (Chapter 10: Globalized Online Learning), MOOCs are believed to offer many benefits including: interactive and engaging delivery that promotes high-quality collaboration and international interactions, global visibility and access to Malaysian expertise areas, and the opportunity to showcase outstanding educational programs and research (see Fadzil et al. 2015).

In 2014, the Higher Education Ministry of Malaysia selected OpenLearning as the national MOOC platform for Malaysian public universities (Chonghui 2016; Ravichandran, in press; Sahyoun 2014). By late 2017, OpenLearning already consisted of around 257 courses from 20 Malaysian public universities. At the present time, roughly 328 Malaysian MOOC courses are offered in OpenLearning.

Instructor's experience in designing MOOC and their design challenges

The cause of people's actions and how they perform an action is rooted in their reasons and motivations (Lin and Lu 2011; Vallacher and Wegner 1987). In order to understand the instructor's experience in designing a MOOC course, it is crucial to know their rationale for offering such massively open online courses. In addition to wanting to extend access of one's content and resources to the world community, there are many other reasons why MOOCs are offered, including the following:

- Democratizing education, i.e., MOOCs are a means to provide quality education for anyone who seeks such learning opportunities;
- Promoting an institution's brand;
- Attracting new learners to enroll in an institution;
- The potential for collaborating with other institutions;

- The potential for research and development in online education; and
- Transforming traditional teaching and learning approaches (Fadzil et al. 2015).

A study of the literature on the use of MOOCs conducted by Hew and Cheung (2014) highlighted three important instructor's reasons for offering MOOCs: (1) the curiosity about MOOCs and wanting to experience teaching a large and diverse body of students, (2) egoistic motives (e.g., obtain tenure, expand one's personal reputation, be viewed as a pioneer among one's peers, etc.), and (3) altruism. Similarly, by adopting Alderfer's (1969) framework, Zhu et al. (2019) found that "growth" needs (e.g., curiosity about MOOCs) and "related" needs (e.g., showcase teaching and research, marketing the university, etc.) were the primary motivations for offering MOOCs.

MOOC designs often consist of developing learning content, activities, and assessments (Drake et al. 2015). Of course, thoughtful planning related to MOOC course design is an essential factor and prerequisite potential to effective learning experiences (Margaryan et al. 2015). By designing the course correctly, learners' interest can be aroused, and this psychological condition will induce learners' motivation, self-regulation, and metacognitive reflection (Terras and Ramsay 2015). While designing a MOOC is similar to any kind of online learning experience, it requires a different approach due to its openness and massiveness (Bali 2014; Drake et al. 2015). The design of MOOCs also depends on the type of pedagogical approach that the instructor selects for their courses (Alario-Hoyos et al. 2014).

There are several research reports that offer strategies for MOOC instructors in designing their courses (e.g., Drake et al., 2015; King et al. 2014; Richter and Krishnamurthi 2014; Siemens 2012; Wong 2016; Yousef et al. 2014). Preparation for the MOOC (e.g., building a team, enrolling in a MOOC course, analyzing the MOOC environment and how it works, and studying the various legal, ethical, and institutional issues), for instance, must be conducted carefully (Richter and Krishnamurthi 2014; Wong 2016). Course attraction is another strategy that might affect students' decision to enroll or stay in the course (Richter and Krishnamurthi 2014; Wong 2016). The ability to maintain student participation is also critical in MOOC design (Wong 2016). Some strategies that can be used for encouraging students' participation include creating learning communities, providing quizzes, and offering more options for content and activities (Bonk et al. 2018a; Drake et al. 2015; Khalil and Ebner 2013). As many MOOC researchers point out, choosing and designing the right assessment will help students track their learning (Drake et al. 2015; Wong 2016). At the same time, offering greater flexibility and adaptability of MOOC-related tasks and assessments can reduce drop-out rates (Fidalgo-Blanco et al. 2016).

Related to MOOC design, some studies have revealed some of the challenges that MOOC designers might encounter. Those challenges include: adjusting and choosing the right activities and content especially in the hybrid MOOCs (Zhang 2013), time constraints, technical complications, choosing the proper assessments, designing instruction for large numbers of students (Najafi et al. 2015), automating grading (Sadigh et al. 2012; Xiong and Suen 2018), and various logistical, pedagogical, financial, and technological considerations (Alario-Hoyos et al. 2014). In a study by Zhu et al. (2017), the challenges of MOOC design consisted of finding and organizing quality content for use with thousands of participants, creating instructional supports, opening up access while also offering autonomy and control to students, and providing timely feedback. However, the existing literature in this area offers suggestions to instructors for solving the design challenges, such as turning to stakeholders, accessing available published journals and reports, and utilizing applications that give guidance on course design (Alario-Hoyos et al. 2014). To address many, if not all, of these challenges, Najafi et al. (2015) suggest that MOOC instructors seek help from their institutions.

Research method

The purpose of this study is to explore Indonesian and Malaysian instructors' reasons to offer MOOCs, and the experiences and challenges in designing their MOOC courses. In order to pursue this aim, the following research questions were addressed in this study:

1. What are instructors' reasons to offer MOOCs?
2. How do instructors design their MOOCs?
3. What challenges do instructors experience in designing their MOOCs?

This study used a mixed methods design (Fetters et al. 2013) to answer the above research questions. Specifically, this study employed a sequential mixed methods design (Bowen et al. 2017; Ivankova et al. 2006) with quantitative data (i.e., surveys) collected first followed by qualitative data (i.e., interviews) collected after to triangulate the data and offer a more holistic interpretation of it.

Research participants

The participants of this study were the instructors of MOOCs offered by Indonesian and Malaysian institutions. The number of Indonesian and Malaysian MOOCs are relatively low compared to the total number of MOOCs provided by edX, Coursera, or Udemy (Shah 2017, 2019). Nevertheless,

there are at least 10 Indonesian MOOCs providers offering MOOCs, namely: IndonesiaX, iMOOC, MOOCs Universitas Terbuka, FOCUS Fisipol UGM, Akademi CIPS, XL Future Learn, Sibejoo, UCEO Universitas Ciputra, Dicoding, and Sekolah pintar. In contrast, the Malaysian MOOCs in this study were all offered through OpenLearning.

The sampling method used in this study is convenience sampling. In selecting the participants, we initially searched for the MOOC providers through Google search engines, online news, and local scientific reports. In addition, we selected the courses offered by the above MOOC providers, from which we collected instructor's contact information. If the instructor's contact information was not available in the website, we directly contacted the providers to obtain access to instructors contact information. Approximately, half of the instructors' email addresses were located from their institutional websites. Through this process, 295 MOOC instructor contacts from Malaysia and Indonesia were collected.

A Web-based survey that took approximately 15–20 min to be completed was sent to these instructors directly through their email, when available, and with help from the MOOC providers, when their email was not available. We received 65 responses from this list of 295 instructors. Of those responses, 46 (15.6%) valid responses were analyzed, while 19 nonvalid responses were excluded from the data analysis as they were deemed incomplete. Factors most likely impacting the response rate included the time available to complete the survey as most of these instructors were consumed with teaching their regular classes. Other likely factors included instructors ignoring their institutional email (Sappleton and Lourenço 2016) and the lack of familiarity with Web-based surveys (Fan and Yan 2010; Mlikotic et al. 2016). However, Szolnoki and Hoffmann (2013) explained that the return rate of volunteer email surveys is much lower than those that are required or face-to-face surveys. In fact, Branstetter (2001) stated that in an opt-in survey which relies voluntary participants, the average return rate is just 8%. Thus, the 15.6% response rate in the present study was deemed quite acceptable.

Nine instructors were chosen from the 17 instructors who volunteered to be interviewed. These were the instructors who replied back when the researcher contacted them. The interviewees included three instructors from Malaysia and six instructors from Indonesia (see Table 1).

Table 1 Interviewees' demographic information

Number	Countries	Providers
1.	Malaysia	OpenLearning
2.	Malaysia	OpenLearning
3.	Malaysia	OpenLearning
4.	Indonesia	Akademi CIPS
5.	Indonesia	IMOOC
6.	Indonesia	IMOOC
7.	Indonesia	IMOOC
8.	Indonesia	MOOCs Universitas Terbuka
9.	Indonesia	IndonesiaX

Data collection and analysis

As indicated, the main data source for this research was a Web-based survey which had 20 closed-ended questions and two open-ended questions. The survey included questions regarding instructor demographics, course basic information, reasons to offer MOOCs, design experiences, and design challenges. The survey questions were adopted from two previous studies by Zhu et al. (2017), Bonk et al. (2018a) as well as through a review of the literature on MOOC design and MOOC challenges (e.g., Alario-Hoyos, et al. 2014; Bonk et al. 2018a; Daradoumis et al. 2013; Richter and Krishnamurthi 2014). The survey was reviewed by five people (i.e., two people from the MOOC providers, two graduate students, and one MOOC expert) for face validity (Drost 2011). Several revisions were made to the survey based on this review.

Semi-structured email interviews were employed as a follow-up with these MOOC instructors. These interviews focused on reasons to offer MOOCs, course design components, and the various design challenges. This approach was intended to clarify the statistical results from the questionnaire and seek participants' perspectives in more depth (Bowen et al. 2017; Ivankova et al. 2006). An email interview format was selected in order to manage noise disturbance and provide convenience to the interviewees in terms of place and time (Opdenakker 2006; Ratislavová and Ratislav 2014). To ensure its validity, the interviews consisted of a set of nine questions which were reviewed by a graduate student and a MOOC expert prior to sending the questions to the interviewees. Follow-up questions were sent to the interviewees for clarification purposes as well as for gathering additional information.

The closed-ended survey data were analyzed using descriptive statistical analyses. To ensure the validity of the data, a MOOC course review was employed to triangulate the data. Specifically, a course review was conducted to collect data regarding preparation, attraction, participation, and assessment strategies used by the instructors. Those four areas were adapted based on Wong's (2016) research findings that preparation, attraction, participation, interaction, consolidation of course content, and post-course support are important factors that lead to effective MOOC teaching. In this study, consolidation will be observed through

instructor's feedback and assessment, while post-course support was excluded because it is more related to how the instructors improved their future teaching (instructor's self-evaluation). Those data were then compared with the survey findings. The open-ended survey and interview data were coded using a content analysis approach (Vaismoradi et al. 2013) to determine categories and themes. Two research members coded the data individually. Afterward, they came up with specific categories. After all the data were coded, the two researchers met and discussed their coding until they reached agreement. The interrater agreement was 86% for open-ended survey and 83% for the interview.

Results

The findings are summarized below starting with key demographic information and followed by addressing the research questions. As already stated above, 46 (15.6%) valid responses were obtained out of 295 instructors. These instructors offered their MOOCs from six MOOC providers in Malaysia and Indonesia, i.e., OpenLearning (52.2%), IndonesiaX (17.4%), MOOCS Unversitas Terbuka (10.9%), iMOOC (10.9%), Focus Fisipol UGM (6.5%), and Akademi CIPS (2.2%). As noted, OpenLearning was the only provider used by the Malaysian MOOC instructors in this study (see Fig. 1).

Figure 2 displays the primary discipline affiliation of MOOC instructors (n = 46) who participated in the survey. As shown, most of the instructors came from the field of education as well as various social sciences disciplines. Those disciplines include agriculture (2.2%), business and management (8.7%), education (21.7%), engineering and architecture (8.7%), humanities (4.4%), law (4.4%), mathematics, statistics, and computer science (13.0%), health sciences (8.7%), social sciences (19.6%), and others (8.7%).

Among these MOOC instructors, most of them had less than 1000 people sign up for their courses (see Fig. 3). More specifically, 36 MOOC instructors (78.3%) stated that they had less than 1000 people enrolled, nine instructors (20.0%) had 1000 to 5000 people enrolled in their MOOCs, and only one instructor (2.2%) had 20,001 to 50,000 people enrolled. Such course enrollments were relatively low compared to MOOCs offered by western universities and institutions (Dillahunt et al. 2014; Jordan 2014).

When the survey participants were asked about the number of MOOCs that they (n = 46) had designed, 33 instructors (71.7%) had just designed one MOOC, nine (19.6%) instructors had designed two courses, and only four (8.7%) instructors had designed three or more courses (see Fig. 4). Stated another way, the majority of these instructors had limited MOOC design experience.

In terms of the course delivery, out of 46 instructors, half of them had their MOOCs blended with a face-to-face class. The survey data indicated that their delivery format was blended (50%), instructor led with assistant or tutor support (21.7%), instructor led with no teaching support (10.9%), primarily learner/participant driven (4.4%), self-paced (8.7%), or some other type of delivery format (4.4%) (Fig. 5).

Research Question #1 What are the instructors' reasons to offer MOOCs?

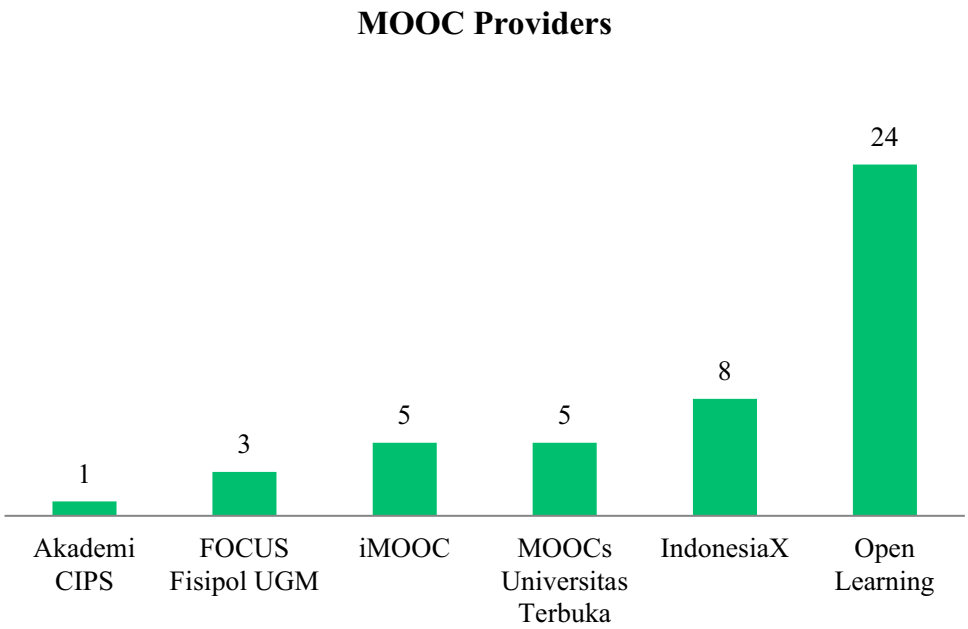


Fig. 1 Platforms utilized by Malaysian and Indonesian MOOC instructors in this study (n = 46)

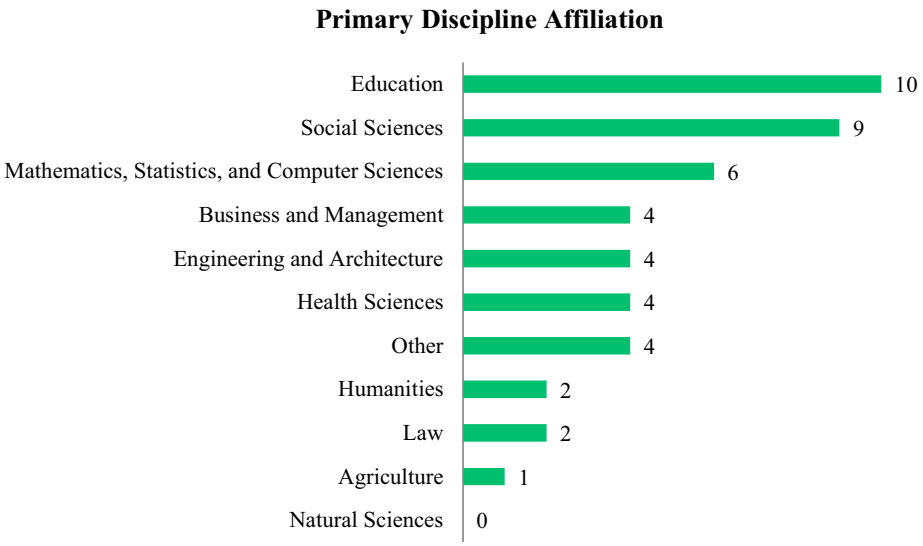


Fig. 2 MOOC instructors' primary discipline affiliation ($n = 46$)

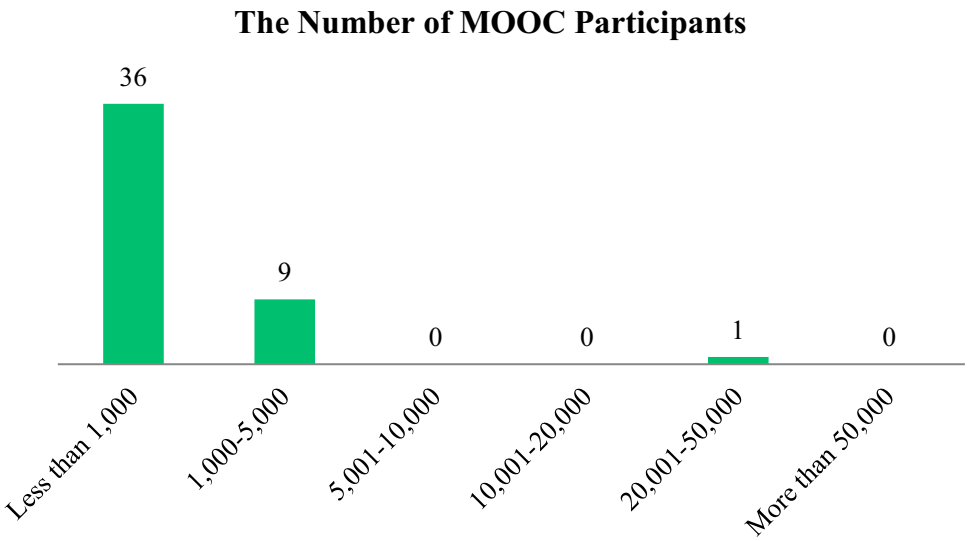


Fig. 3 The number of participants who enrolled in their MOOCs ($n = 46$)

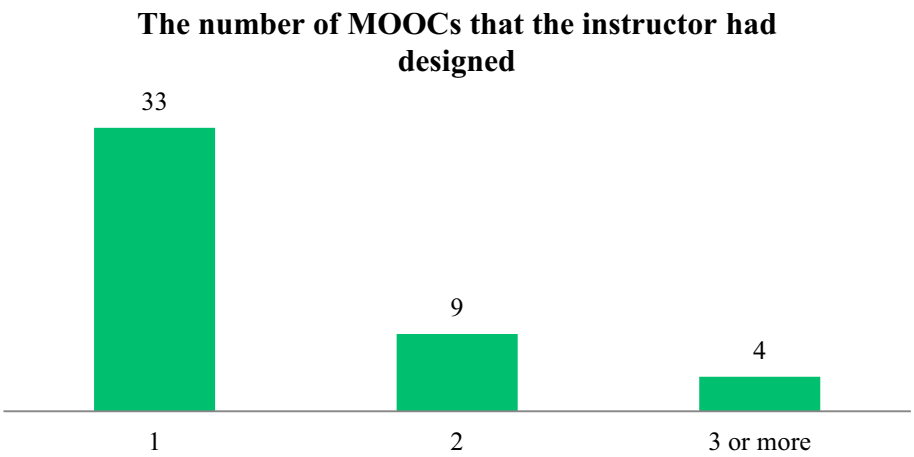


Fig. 4 The number of MOOCs that the instructor had designed ($n = 46$)

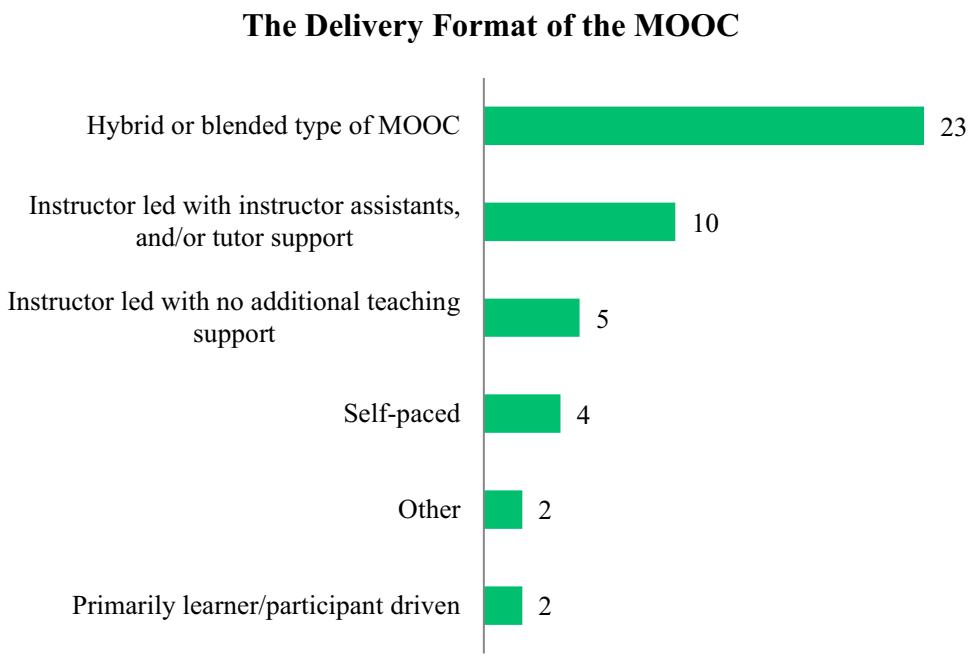


Fig. 5 The delivery format of their current MOOC course ($n = 46$)

In terms of MOOC instructors' reasons to offer MOOCs, among these participants ($n = 43$), the majority of instructors stated that they aimed to increase participant access to education (74.4%). Specifically, 32 instructors offered MOOCs to increase participant access to education, 26 instructors did so because of institutional encouragement, 26 for contributing to human development, 24 wanted to experience teaching and connecting to a large online course, 15 of these instructors offered MOOCs due to personal interest, seven for research purposes, and one instructor offered his MOOC for English language teaching purposes (see Fig. 6).

In comparison, both Malaysian and Indonesian instructors tend to have less interest in offering MOOCs as a means of conducting research. Increasing participant access to education and institutional encouragement are the key reasons for instructors from these two countries to offer MOOCs. During the interview, at least two interviewees explained that they were appointed by their institution to offer MOOCs. For instance, one interviewee stated that he was selected by his university. As he put it, "Actually my course has been selected by the university to be offered in MOOC, and the university asked me to develop the content of this course for

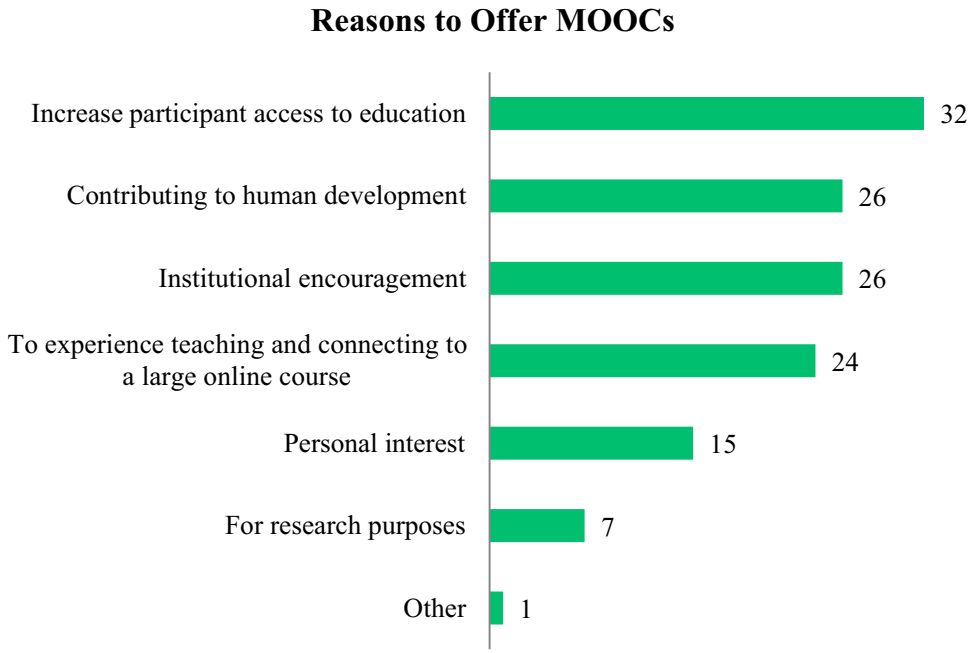


Fig. 6 Instructors' reasons to offer MOOCs ($n = 43$)

MOOC." Another interviewee stated that he was appointed by his department to lead the MOOC development efforts at his institution: "I'm new in MOOC. I started making this platform after being chosen by the department head to develop a MOOC platform. Therefore, I chose to develop wireless communication courses."

Research Question #2 How do instructors design their MOOCs?

In presenting the findings on how instructors design their MOOCs, it will be divided into preparation, attraction, participation, and assessment strategies. Overall, when comparing between both countries in terms of design strategies, Malaysian instructors tend to have more strategies compared to Indonesian instructors. Notably, such strategies are related to increasing learners' attraction to and participation in the course.

Preparation

Figure 7 summarizes the preparation strategies that the instructors in this study engaged in while designing their MOOCs. Of the 43 respondents to the present study, 29 instructors (67.4%) built or utilized a team to design their MOOC, 27 instructors (62.8%) familiarized themselves with various design tools, 24 instructors (55.8%) enrolled in other MOOC courses, 22 instructors (51.2%) stated that they investigated the MOOC environment, 20 instructors (46.5%) investigated new and emerging learning theories, 20 instructors (46.5%) sought advice from other instructors, 17 instructors (39.5) investigated the legal, ethical, and institutional issues related to MOOCs, 11 instructors (25.6%) attempted to understand different types of MOOCs (e.g., cMOOCs, xMOOCs, pMOOCs, etc.), and nine instructors (20.9%) learned from their previous MOOCs. Among the instructors who choose "other," both of them mentioned conducting a 'needs' analysis (4.7%).

When asked about the components of their MOOCs that they ($n = 43$) received help in designing, common components were video lectures (65.1%), course layout (51.2%), and learning materials (46.5%) (see Fig. 8). These findings can help other instructors who are planning to design MOOCs to make decisions related to their course designer team or the specific skills that need to be obtained to design a MOOC course. Other components wherein MOOC instructors received help included the discussion board/thread (37.2%), assessment (34.9%), participant interaction (34.9%), weekly activities planning (30.2%), introduction (30.2%), learning pedagogy (27.9%), making handouts (14.0%), and designing and profiling learning analytics (2.3%). Interestingly, only two of the 46 MOOC instructors (4.7%) in this study stated that they did not receive any help.

During the interview, some interviewees alluded to the difficulties that they encountered related to designing video lectures. One interviewee from Indonesia stated that the main problem is on how to produce a compact video but still be able to cover a wide range of materials. He was perplexed with "How to embed extensive materials into videos of short duration." Another interviewee from Malaysia mentioned the importance of video in increasing students' motivation to learn. As he stated, "If the videos, slides and notes do not appeal to the students, [sic] students will get bored, and thus the less motivated learners to learn."

Attraction

The second strategy relates to the increasing participants' attraction or motivation to continue to study. The most common strategies used by the instructors ($n = 43$) in this regard included to (1) provide course information (72.1%), (2) offer recognition (60.5%), and (3) design a list of steps

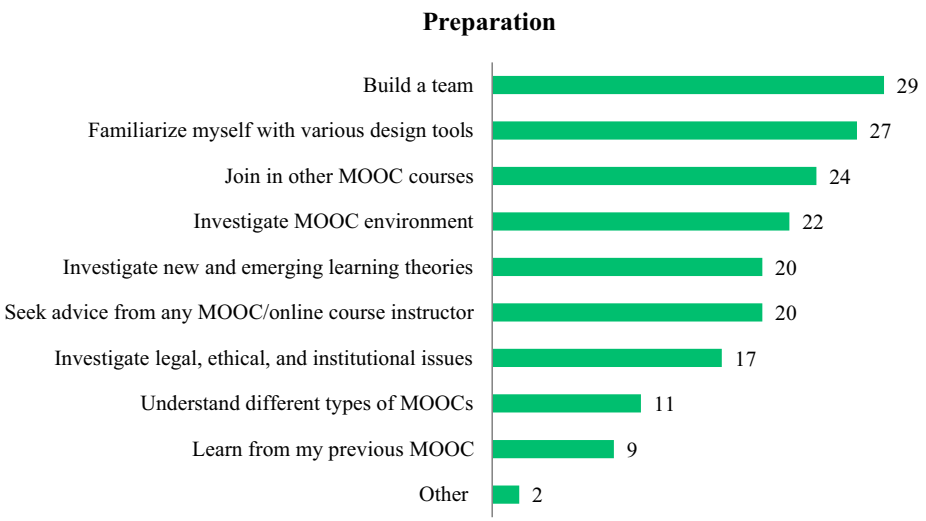


Fig. 7 MOOC instructors' preparation strategies when designing MOOCs ($n = 43$)

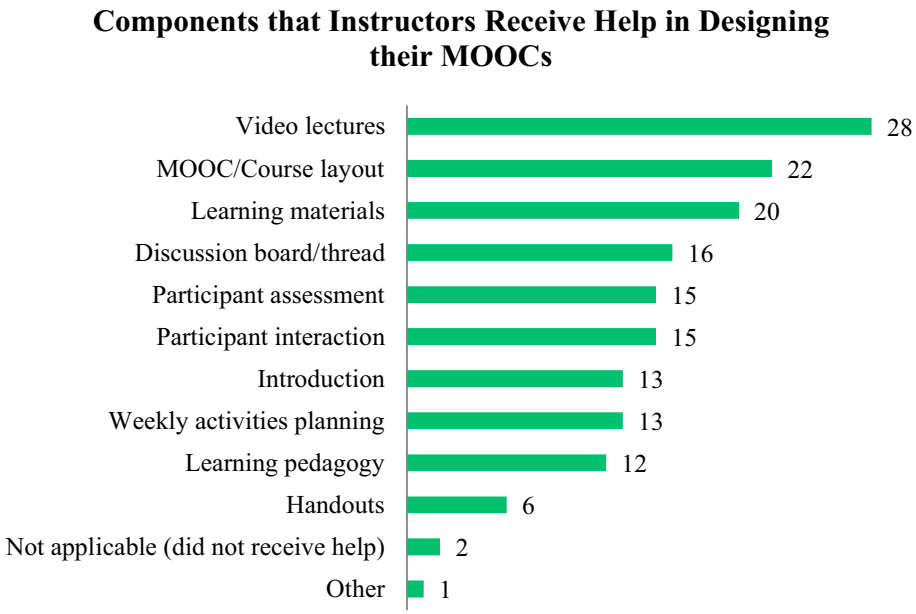


Fig. 8 Designing the MOOC components wherein help was received by MOOC instructors during the design process ($n = 43$)

to complete for success in the course (55.8%). Based on these findings, it is apparent that orientation and recognition are two important strategies employed by the instructors to increase enrollment and retention (see Fig. 9). Among the other strategies employed by MOOC instructors to increase participant efforts included: providing welcoming lectures (46.5%), laying out instructors' expectations (39.5%), designing a visual depicting the path to success in the course (37.2%), explaining the prerequisite knowledge early on (37.2%), posting examples of what students are expected to complete (32.6%), providing personal email support (30.2%), offering a video trailer (30.2%), posting prior student testimonials (25.9%), and other items (9.3%).

An Indonesian instructor stated that, "Due to different background[s] and needs, the most effective way to motivate and approach them is by giving them [an] example." Another strategy to increase course attraction is by means of a course introduction that included information about the prerequisite knowledge and course expectations. As one of the interviewees from Indonesia explained, the course introduction was developed to clearly state the requirements of learners and their expected entry levels.

Participation

In designing MOOCs, the instructors ($n = 42$) used many strategies with the aim to increase students' participation (see Fig. 10). The more popular among such strategies included giving certificates/badges (66.7%); using multimedia (61.9%); assigning optional readings, videos, or other learning materials (59.5%); attempting to create learning communities (59.5%); embedding quizzes (54.8%); offering

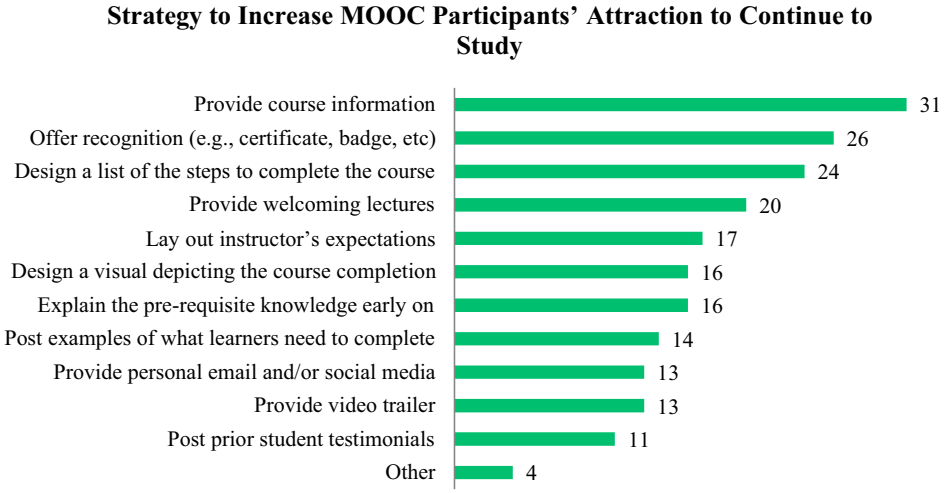


Fig. 9 MOOC instructors' strategies to increase participants' efforts to continue to study ($n = 43$)

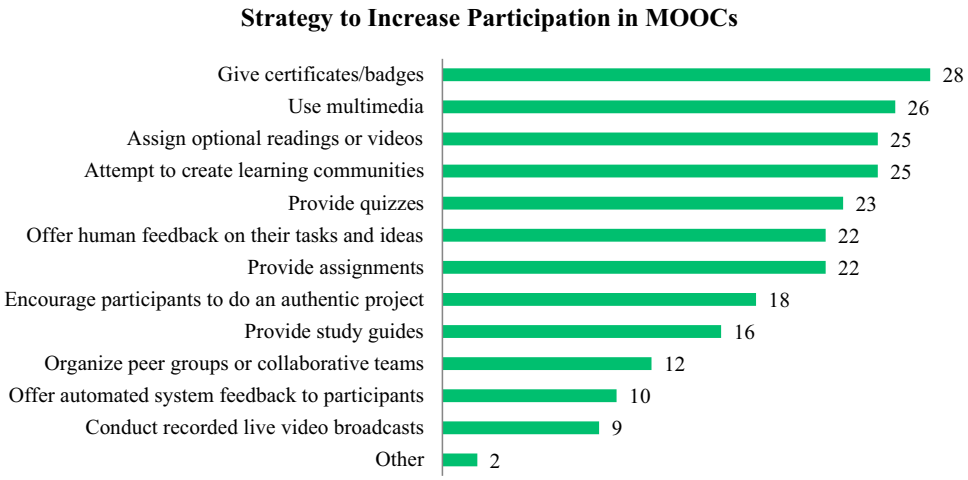


Fig. 10 MOOC instructors' strategies to increase learner participation ($n = 42$)

human feedback on student tasks/assignments (52.4%); and providing assignments (52.4%). Many of these MOOC instructors also indicated that they encouraged participants to engage in an authentic project (42.9%), provided study guides (38.1%), organized collaborations (28.6%), offered automated system feedback (23.8%), or conducted recorded live video broadcasts (21.4%). Other techniques used less often included offering face-to-face meetings and transferable credits.

These MOOC instructors in Malaysia and Indonesia were also asked how they designed their course to provide the ability to monitor/track participation. The top five answers from the 42 instructors responding to this question were weekly or daily reports offered by learning analytics (50.0%), self-monitoring and self-evaluation (50.0%), modular or unit-based progress (45.2%), personal tracking from the instructor (40.5%), and teaching assistant feedback (33.3%). Many of these instructors also relied on self, peer, or group tracking or some hybrid combination approach to monitor participation. One interviewee "sent [a] personal message or email for the less motivated ones" (Fig. 11).

One of the interviewees from Indonesia stated that his MOOC course is equipped with learning analytics to track students' progress:

> We are equipped our LMS with Learning Analytics. Learning Analytics (LA) is currently being widely used by online learning providers to enhance [the] learning process and to boost student engagement and interaction. The LA can be used as both prescriptive tools and predictive measures. It collects information about the student access to learning resources, interactions and activities. LA provides real time visual image of student learning behaviors. It is easy to manage and operate.

Assessment

In designing their courses, these MOOC instructors employed several mechanisms to assess students' learning (see Fig. 12). Out of 42 respondents to this question, the most popular assessments used by the MOOC instructors in

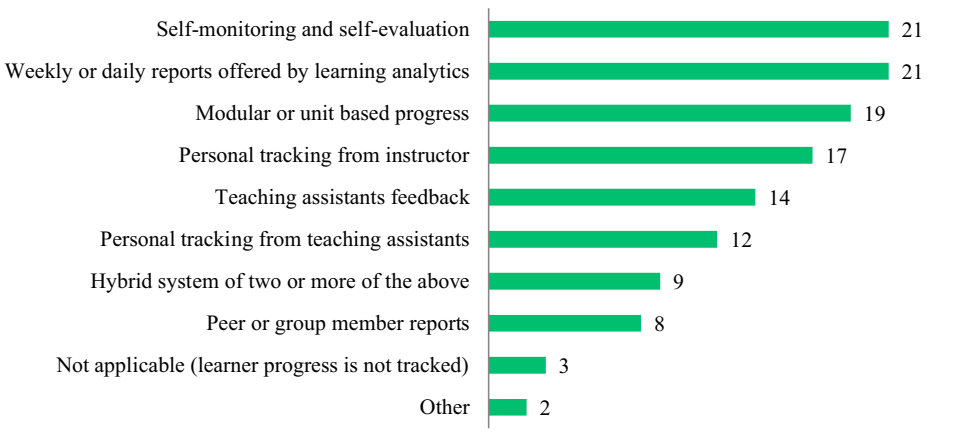


Fig. 11 Participation monitoring or tracking in MOOCs ($n = 42$)

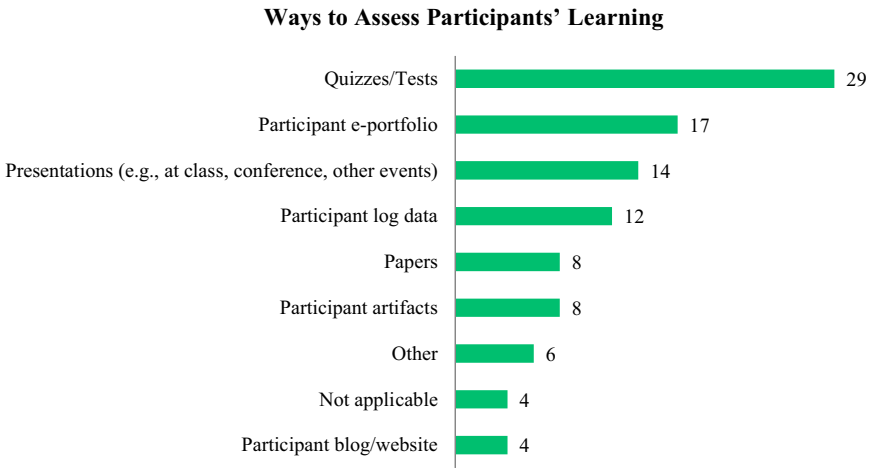


Fig. 12 Ways MOOC instructors employ to assess MOOC participant learning ($n = 42$)

Malaysia and Indonesia were quizzes (69.1%), e-portfolios (40.48%), presentations in class/conference/other events (33.3%), and log data (28.6%). Related to their assessment strategies, one interviewee mentioned several ways to assess students' learning: "we provide ……..varieties of ways for measuring participants learning result such as participation in guided discussions, quizzes, essay writing, involve in individual or group projects, etc."

Feedback is vital to learning. One concern with MOOCs is the ability to offer feedback on such a large scale. When asked how the participants in their MOOCs obtained feedback for their learning, in contrast to a previous study which found that MOOC instructors relied mostly on peer feedback, tutor and teaching assistant feedback, and system feedback and just 40% utilized instructor feedback (Bonk et al. 2018a), MOOC instructors in the present study (n =42) relied primarily on instructor feedback (63.4%), peer feedback (58.5%), moderator/tutor/teaching assistant feedback (48.78%), and task/assignment rubrics for participant feedback (36.59%) (see Fig. 13). They were less reliant on system/computer feedback (24.39%), self-feedback (21.95%), outside expert feedback (7.3%), and others (4.9%). Clearly, the opportunities for feedback in MOOCs are extensive and yet quite varied in Indonesian and Malaysian MOOCs.

Research Question #3 What challenges do instructors experience in designing their MOOC?

Designing a MOOC course that leads to effective teaching can be challenging (Wong 2016). Figure 14 summarizes the MOOC design challenges that the instructors ($n = 42$) perceived. The key challenges included engaging learning (59.5%), encouraging collaboration (57.1%), addressing time

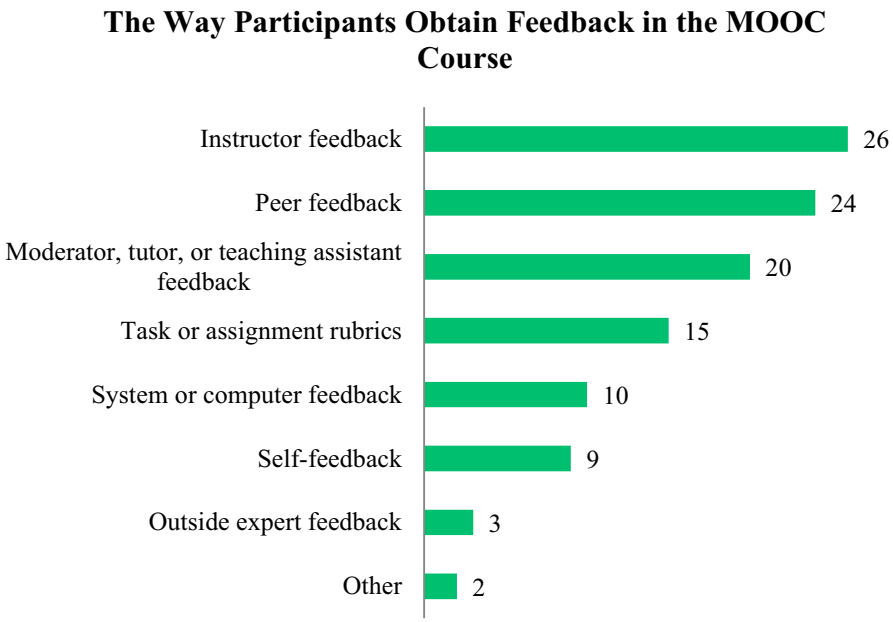


Fig. 13 The ways that MOOC participants obtain feedback during the course ($n = 42$)

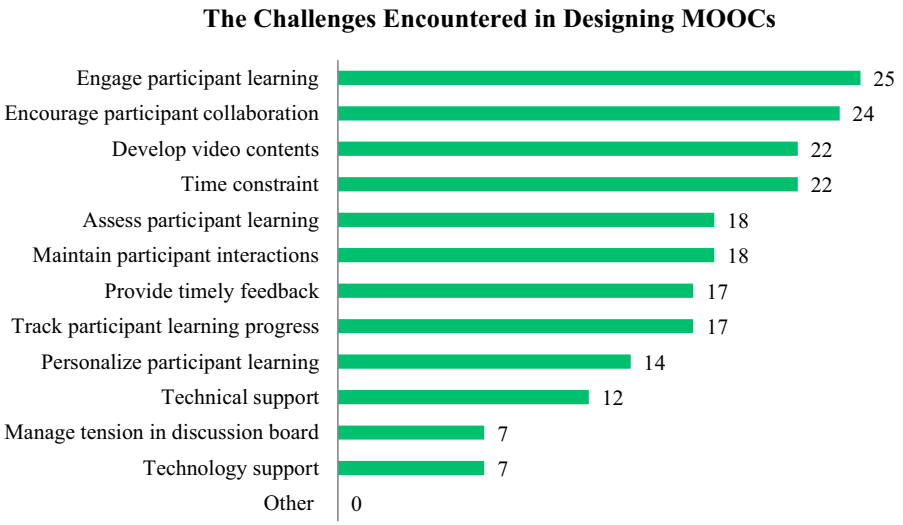


Fig. 14 The challenges that the instructors face when designing their MOOCs ($n = 42$)

constraints (52.4%), and developing course videos (52.4%). Several other important challenges noted by the MOOC instructor participants included assessing participants' learning (42.9%), maintaining participants' interactions (42.9%), tracking participants' learning progress (40.5%), providing timely feedback (40.5%), personalizing participants' learning (33.3%), and obtaining needed technical support (28.6%). Less common challenges were related to managing tension, rudeness, alienation, and intense debates (16.7%) and regarding receiving adequate technology (hardware) support (16.7%).

Based on the survey data, we also compared the challenge factors between Indonesian and Malaysian instructors. The Indonesian instructors felt that technology support is the least challenging, whereas the least challenging for the Malaysian instructors related to managing tension, rudeness, alienation, and intense debates in the discussion board. However, the majority of instructors from both countries felt that engaging participant learning and encouraging participant collaboration are among the biggest challenges in designing MOOCs.

Similar to the survey results reported above, during the interview, one instructor from Malaysia mentioned that student engagement is challenging and crucial. He stated that, "student's engagement is vital… to engage in a meaningful learning is a challenge especially with an instructor, peers, and course content." In terms of time constraints, another interviewee stated that

> First of all this project is conducted at the same time we all have to complete our regular job so sometimes time management can be an important issue… There are moments we cannot reach one or two of the developers because they were too busy with their work or they feel that this program does not provide strong financial support for them.

Furthermore, three interviewees mentioned that video making is challenging. One of the interviewees highlighted the challenge that he faced in terms of video development, "Many challenges are faced. among others are: …The skill of making videos, animations and interesting slides is required to develop this MOOC platform."

Related to such design challenges, we asked the respondents where MOOC instructors turned for help/advice when facing challenges (see Fig. 15). The top six resources for MOOC instructors ($n = 42$) are other MOOC instructors (59.52%), MOOC providers (54.76%), their institutions (42.86%), video tutorials (38.1%), open educational resources (31.0%), and books and technical reports (28.6%). For the most part, these findings are in line with the interview results.

Discussion and implications

Several key findings revealed in this study of Indonesian and Malaysian MOOC instructors are important to highlight and discuss. First of all, approximately half of the survey participants were from Malaysia (52.2%) and all of these Malaysian MOOCs were listed in OpenLearning. OpenLearning is a MOOC platform which is based in Australia. In contrast, the Indonesian MOOC instructors who participated in this study utilized several platforms; namely, Open edX, Canvas, and Moodle platforms. Having one place for MOOCs would address learner difficulty in searching for the appropriate MOOCs and help them manage their learning activities compared to the problems and issues of being enrolled in several courses from several sites. From

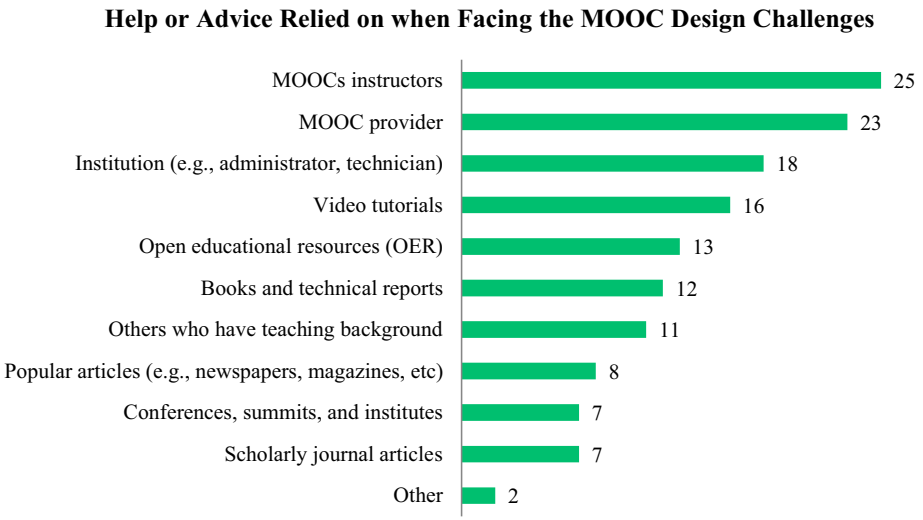


Fig. 15 The kinds of help/advice that the instructor received when facing design challenges related to their MOOCs ($n = 42$)

the MOOC instructors' perspectives, having the same platform would make it easier to obtain help from other instructors, collaborate with them, and generally learn from each other. A second key finding was that the majority of the MOOC instructors (71.7%) who participated in this study had designed just one MOOC. Thus, it can be concluded that most of the study participants were relatively new to MOOCs. Nevertheless, the majority of them had a teaching background.

In terms of the delivery format, our findings showed that the majority of these courses would be categorized as hMOOCs (50%) or xMOOCs (32.6%). It is important to point out that in this study, a hybrid type of MOOC that combined the face-to-face classroom activities with MOOC course activities was employed by half of the MOOC instructor participants. Follow-up research might explore the instructional opportunities and learning benefits from such smaller sized hybrid MOOCs which allow for a blending of online and face-to-face learning experiences.

The reasons that these instructors offered MOOCs were related to personal and professional motivations, the intention to use technology to reach global audiences, and the emotional consequences of such involvement (Kolowich 2013). Our survey of instructor reasons to offer MOOCs shows that there were five primary motives, including the following: (1) personal interest, (2) research purposes, (3) experience teaching a large online course, (4) institutional encouragement, and (5) altruism (Evans and Myrick 2015). The personal interests that an instructor can gain by offering MOOCs include becoming the first among their colleagues who experience offering MOOCs, personal branding, and obtaining tenure (Hew and Cheung 2014). In terms of the second motive, by conducting research on MOOCs, the various results of the present study can be used to redefine, rethink, and rearticulate the online education practices in Malaysia and Indonesia in the near future (Fadzil et al. 2015; Teplechuk 2013). At the same time, for higher education institutions, our results might serve to encourage other instructors to teach MOOCs with the ultimate aim to raise the university, department, or program profile through MOOC publicity as well as to perhaps obtain new academic partnerships, while extending academic outreach to new student markets (Teplechuk 2013).

MOOC designs are challenging due to their massiveness as well as the open nature of MOOCs. Nevertheless, how a MOOC is designed will have a significant impact on students' learning and outcomes (Drake et al. 2015). In this study, we attempted to explore the strategies used by the MOOC instructors in Indonesia and Malaysia in designing their courses in terms of four key factors: (1) preparation, (2) attraction, (3) participation, and (4) assessment. As we expected, preparation was found to be an essential part of the MOOC design process. In fact, our findings suggested that the instructors do some preparation by investigating the MOOC environment and the different types of MOOCs. Such practices are important in order to justify the design of a MOOC course because not all pedagogies fit with a particular course context (Wong 2016). Instructors also prepare for their MOOCs by participating in one or more other MOOCs from different platforms. In addition, they browse through studies on new and emerging learning theories and practices related to MOOCs as well as explore the legal, ethical, and institutional issues associated with MOOCs. Such findings are in line with recommendations from Richter and Krishnamurthi (2014) related to how to prepare faculty for teaching a MOOC.

Since designing a MOOC is a daunting task, an instructor needs help from a team of MOOC support personnel to pursue it. To explicate this notion of a team, Kellogg (2013) argued that

> When it comes to designing a MOOC, instructors recommend that first-timers recruit a support team—perhaps including curriculum-development specialists, computer programmers, videographers or tech-savvy teaching assistants—to help them to clear pedagogical and technical hurdles (p. 370).

Based on the findings of the present study, an effective MOOC course design needs full support from the entire MOOC team as well as their institution. The availability of various content and technology resources; the acceptance and understanding of effective forms of work sharing and collaboration; and the support for various legal, administrative, and instructional design issues can ease the instructors' responsibilities. In terms of course preparation, MOOC instructors must familiarize themselves with various design tools. They must also learn from their previous MOOC while seeking advice from other MOOC or online course instructors. In addition, advice and vital situated perspectives from other instructors can enrich their familiarity with the MOOC environment to better design online courses that are open to the world community. While extensive preparation and planning is vital, the first-hand experience that the instructor gains while teaching a MOOC is eye opening. Of course, any form of course evaluation that has taken place can be used as the basis and rationale to improve the next offering of their MOOC.

Attraction to the course will affect students' decision to enroll in the course as well as their ultimate retention rates. Offering some form of recognition such as a certificate, badge, points, or transfer credit is one strategy to increase student enrollment in MOOCs (Grajek et al. 2013; Haug et al. 2014; Hew and Cheung 2014). Complete course information, including the course expectations, prerequisite knowledge deemed necessary, prior student testimonials, resources requirements, and instructor's contact information, needs to be explicitly stated to help potential students make decisions on whether they want to continue to enroll in the course (Hew 2015). In fact, the availability of course information is one of the standards employed by the Quality Matters (QM) consortium to indicate the quality of an online course (Lowenthal and Hodges 2015).

In this study, more than half of the instructors stated that their courses offered certificate/badges in order to increase students' participation. Simply put, such motivational carrots and extrinsic motivators apparently remain an effective way to increase student participation and motivate them to complete the course (de Freitas et al. 2015; Gené et al. 2014). Designing tasks and assignments, offering feedback on participant work, and embedding quizzes and other forms of assessment are some of the strategies used by the instructors to increase MOOC learner participation. Not too surprisingly, research indicates that students want to receive feedback on their learning so that they can assess their level of achievement (de Freitas et al. 2015).

Half of the Indonesian and Malaysian instructors who participated in this study stated that they used self-monitoring and self-evaluation to track students' participation. This emphasis on personal evaluation of one's learning journey in a MOOC is expected, considering that MOOCs are often designed based on the nature of self-regulated learning (Kizilcec et al. 2016; Littlejohn et al. 2016). At the same time, half of these instructors stated that they relied on learning analytics to track students' participation. The data from learning analytics are beneficial to efficiently assess and track students' participation and content engagement (Daradoumis et al. 2013).

Assessing students' learning is one of the ways to improve students' engagement (Hew 2015). As with most any educational experience, a MOOC course can be designed to have one or more assessments. A poorly designed and nonauthentic assessment will quickly reduce students' interest; as a result, any assessment must be clearly designed (Zutshi et al. 2013). The most popular way to assess students' learning in this study was using quizzes and tests as well as practice exercises. In contrast to computer-adaptive or personalized learning environments, the instructors in this study typically provided the same set questions for every student in their attempt to foster learning.

According to Chauhan (2014), the use of adaptive testing for instructors who want to use tests and examinations for their MOOC courses can be designed to "automatically adapt to student learning and ability to measure learner performance and learning outcomes" (p. 15). Such tests can address different difficulty levels and can be based on the response of the MOOC learner to each test item. He also noted that papers, discussion forums, and social media discussion, are other forms of assessment that can be used in MOOCs (Chauhan 2014).

In designing course assessments, besides choosing the right assessment method(s), it is also vital that instructors consider how their students will receive feedback on their learning contributions and accomplishments. Instructor feedback is the most popular strategy used by the Indonesian and Malaysian instructors. However, this might be challenging if there are thousands of students enrolled in the class. Naturally, a lack of feedback might lead to course drop-out (Khalil and Ebner 2014; Tyler-Smith 2006). Thus, instructors might rely on help from co-instructors, teaching assistants, tutors, and previous MOOC participants who completed the course. In addition, the instructor can design assessments that use peer and self-assessments. However, if the instructor decides to employ computer-based grading, he/she must consider the negative effects of such automated grading systems, including the likely inability to insert

marks or detailed reviews and pointed comments (Daradoumis et al. 2013).

Based on the survey, interview, and content analysis results of this study, the top design challenges for Malaysian and Indonesian MOOC instructors include encouraging collaboration, participant engagement, video development, and various time constraints. Naturally, high levels of collaboration might be difficult due to time differences. As noted by Guàrdia et al. (2013), collaboration problems and issues may also result from low encouragement from the instructors or due to unclear statements of the overall course expectations. Guàrdia et al. (2013, p. 3) also suggested the use of "Self-regulation, self-paced, and self-assessment together with peer support and interest groups formation" to boost student engagement.

A couple of other issues and challenges that these MOOC instructors mentioned are worth noting. For instance, a major challenge with video development is the ability to shrink lengthy course materials into short video segments or just one shorter segment, while also designing these to be attractive, clear, and highly functional. Thus, it is important for the institution to provide guidance and training to MOOC instructors, or assign a video maker professional to support such MOOC instructors in designing their courses (Richter and Krishnamurthi 2014). In addition, based on the interview data, time constraints emerge as a major issue for MOOC instructors in Malaysia and Indonesia due to the pervasive time conflict with their other teaching and administrative duties. For instance, several MOOC instructors mentioned difficulties in establishing times that work for the entire course design and development team.

Limitation and future directions

There are some limitations regarding this study. First, as noted earlier, this was an opt-in study. It would be interesting to survey and interview other MOOC instructors who might have had different or less-favorable experiences. Second, the findings of this study are limited to Malaysian and Indonesian MOOC contexts. Third, we did not directly explore the course contents and interactions or monitor these MOOCs as they unfolded over time. Fourth, in approaching the MOOC course design strategies, due to various time and resource limitations, this study relied solely on the perspectives of instructors. Finally, this was not a longitudinal study, but just a snapshot of Malaysian and Indonesian MOOC instructor perspectives at a specific moment in time. Survey and interview results of these same respondents in several years could be vastly different due to increased familiarity and experience with MOOCs as well as untold technological and pedagogical enhancements and refinements.

Given these limitations, the findings of this study cannot be used to generalize how an instructor uses different strategies in designing MOOC courses in various contexts around the world. However, the findings might be useful to MOOCs that have similar characteristics, such as MOOCs in other Southeast Asian countries or Asia in general. Nevertheless, the various results revealed here can be used to help explain the phenomenon of MOOC course design in Indonesia and Malaysia. Our findings also uncovered some of the key challenges to MOOC design experienced in these two countries as well as several interesting instructional approaches and strategies that have the potential to be beneficial for future instructors and instructional design personnel who intend to build a MOOC course in this region of the world.

Future research can expand on these findings by adding perspectives from MOOC participants, affiliated institutions, and MOOC providers, as well as an exploration on why Malaysian instructors tend to have more variation in their design strategies compared to Indonesian instructors. Even limited or stunted glimpses of their perspectives can provide deeper descriptions of the MOOC design phenomenon. Given that the present study only focuses on MOOCs developed by Indonesian and Malaysian instructors, there is now an opportunity to extend the study to a larger context such as to additional countries in Southeast Asia or perhaps on to the world community. When such expansion occurs, it is hoped that an enhanced understanding of MOOC design challenges and considerations will help the next generation or phase of MOOC instructors to create more robust, enriching, and empowering MOOCs.

Appendix 1: Questionnaire

Appendix 1: Questionnaire

1. What is the name of your most recent MOOC offering? _____
2. At which provider your MOOC is being offered:
    a. Dicoding
    b. FOCUS Fisipol UGM
    c. IndonesiaX
    d. MOOCs Universitas Terbuka
    e. Open Learning
    f. UCEO Universitas Ciputra
    g. Other (Please describe): _____
3. What is your department or primary discipline affiliation?
    a. Agriculture
    b. Business and Management
    c. Education
    d. Engineering and Architecture
    e. Humanities
    f. Law
    g. Mathematics, Statistics, and Computer Sciences
    h. Natural Sciences
    i. Health Sciences
    j. Social Sciences
4. How many people enrolled in your most recent MOOC?
    a. Less than 1,000
    b. 1,001-5000
    c. 5001-10,000
    d. 10,001-20,000
    e. 20,001-50,000
    f. More than 50,000
5. How many MOOCs have you taught (including any that you are currently teaching)?
    a. 0
    b. 1
    c. 2
    d. 3 or more
6. How many MOOCs have you designed?
    a. 0
    b. 1
    c. 2
    d. 3 or more
7. What is the delivery format of your most recent MOOC?
    a. Hybrid or blended type of MOOC
    b. Instructor led with instructor assistants, and/or tutor support
    c. Instructor led with no additional teaching support
    d. Primarily learner/participant driven
    e. Self-paced
    f. Other (Please describe): _____
8. Why do you offer MOOCs? [Check all that apply]
    a. Contributing to human development

   b. For research purposes
   c. Increase participant access to education
   d. Institutional encouragement
   e. Personal interest
   f. To experience teaching and connecting to a large online course
   g. Other (Please describe): _____
9. What did you do before designing your MOOC? [Check all that apply]
   a. Build a team
   b. Investigate legal, ethical, and institutional issues related to MOOC
   c. Investigate MOOC environment
   d. Investigate new and emerging learning theories
   e. Familiriaze myself with various design tools
   f. Join in other MOOC courses which already established
   g. Learn from my previous MOOC
   h. Seek advice from any MOOC or regular online course instructor
   i. Understand different types of MOOCs (i.e., xMOOC, cMOOC, quasi MOOC)
   j. Other (Please describe): _____
10. Which components of your recent MOOC did you receive help in designing? [Check all that apply]
   a. Discussion board/thread
   b. Handouts
   c. Introduction
   d. Learning materials
   e. Learning pedagogy
   f. MOOC/Course layout
   g. Participant assessment
   h. Participant interaction
   i. Video lectures
   j. Weekly activities planning
   k. Other (Please describe): _____
   l. Not applicable (did not receive help)
11. From the scale of "not considered" to "very important," please rate these following consideration factors when designing a MOOC? (very important, important, moderate, somewhat important, not considered)
   a. Assessment methods (e.g., quiz, portfolio, paper, etc)
   b. Available online resources (e.g., OER, YouTube video, etc)
   c. Course duration
   d. Culture and language
   e. Easy access to the learning materials
   f. Hardware supports
   g. Institutional support
   h. Learning objectives
   i. MOOC platform
   j. Participant characteristics
   k. Participant interaction
   l. Pedagogical approaches
   m. Possible context for application (e.g., local context, national context, international context)
   n. Software supports (e.g., presentation software, video editing software, etc)
   o. Technical support
   p. The ideal course structure
   q. Time needed to design MOOC
   r. Tools for communication (e.g., E-mail, facebook, twitter, sms, etc)
12. How do you address different participants' background and goals? [Check all that apply]
   a. Embed supplementary course materials (e.g., readings, animations, simulations, maps, job aids, news, videos, etc.)
   b. Emphasize project-based learning over exams

   c. Establish learner reflection journals or blogs
   d. Establish learner-based discussion forums
   e. Establish study groups
   f. Hold synchronous lectures, meetings, and events (e.g., Skype, Google Hangouts, Zoom, etc.)
   g. Offer face-to-face meet-up opportunities
   h. Post timely course announcements and emails
   i. Record video tutorials (e.g., Screencasts, YouTube walkthroughs, etc.)
   j. Schedule virtual office hours and meetings
   k. Using preexisting online videos (e.g., Lynda.com, TED talks, YouTube, etc.)
   l. Other (Please describe): _____
13. What was your strategy for increasing participants' decision to continue studying it or not? [Check all that apply]
   a. Design a list of the steps to complete for success in this course
   b. Design a visual depicting the path to success in this course
   c. Explain the pre-requisite knowledge early on
   d. Lay out instructor's expectations
   e. Offer recognition (e.g., certificate, badge, points, etc)
   f. Post examples of what learners are expected to complete (e.g., prior student work)
   g. Post prior student testimonials
   h. Provide course information
   i. Provide personal email and/or social media information
   j. Provide video trailer
   k. Provide welcoming lectures
   l. Other (Please describe): _____
14. What was your strategy to increase participants' participation? [Check all that apply]
   a. Assign optional readings, videos, or other learning materials
   b. Attempt to create learning communities
   c. Conduct recorded live video broadcasts
   d. Encourage participants to do an authentic project
   e. Give certificates/badges
   f. Offer human feedback on their tasks and ideas
   g. Offer automated system feedback on their tasks or examinations
   h. Organize peer groups or collaborative teams
   i. Provide assignments
   j. Provide quizzes
   k. Provide study guides
   l. Use multimedia (e.g., video lectures, audio files, info-graphics)
   m. Other (Please describe): _____
15. How do you design your course to be suitable for participants from different cultures and/or linguistic backgrounds? [Check all that apply]
   a. Add subtitles to video content
   b. Be careful with language use and hand gestures
   c. Encourage participants to translate and localize the content for others
   d. Limit text by relying more on pictures
   e. Offer transcripts of video or audio content
   f. Simplify the course content and navigation
   g. Simplify the language used
   h. Slow the pace of speech
   i. Translate the content to different languages
   j. Other (Please describe): _____
16. How was participant progress/participation monitored or tracked? [Check all that apply]
   a. Modular or unit based progress
   b. Peer or group member reports
   c. Personal tracking from instructor
   d. Personal tracking from teaching assistants
   e. Self-monitoring and self-evaluation

f. Teaching assistants feedback
g. Weekly or daily reports offered by learning analytics
h. Hybrid system of two or more of the above
i. Other (Please describe): _____
j. Not applicable (learner progress is not monitored or tracked in this MOOC)

17. In what ways do participants obtain feedback in the course? [Check all that apply]
    a. Instructor feedback
    b. Moderator, tutor, or teaching assistant feedback
    c. Outside expert feedback
    d. Peer feedback
    e. Self-feedback
    f. System or computer feedback
    g. Task or assignment rubrics
    h. Other (Please describe): _____
18. In your most recent MOOC, what do you use to assess participants' learning? [Check all that apply]
    a. Papers
    b. Participant e-portfolio
    c. Participant log data
    d. Participant artifacts
    e. Participant blog/website
    f. Presentations (e.g., at class, conference, other events)
    g. Quizzes/Tests
    h. Other (Please describe): _____
    i. Not applicable
19. What are your challenges in designing MOOCs? [Check all that apply]
    a. Assess participant learning
    b. Develop video contents
    c. Encourage participant collaboration
    d. Engage participant learning
    e. Maintain participant interactions
    f. Personalize participant learning
    g. Provide timely feedback
    h. Technical support
    i. Technology support
    j. Time constraint
    k. Track participant learning progress
    l. Manage tension, rudeness, alienation, and intense debates in discussion board
    m. Other (Please describe): _____
20. Where did you turn for help or advice when facing the challenges of designing MOOCs? [Check all that apply]
    a. Books and technical reports
    b. Conferences, summits, and institutes
    c. Institution (e.g., administrator, technician)
    d. MOOC provider
    e. MOOCs instructors
    f. Open educational resources (OER)
    g. Others who have teaching background (e.g., regular class instructors, teaching assistant, teachers)
    h. Popular articles (e.g., newspapers, magazines, etc)
    i. Scholarly journal articles
    j. Video tutorials
    k. Other (Please describe): _____
21. How did you design your MOOC to make it easier to access for participants with different technology access?
22. If you were to redesign your most recent MOOC offering (i.e., the course contents, structure, activities, assessments, etc.), what part(s) would you want to change and why?

Appendix 2: E-mail interview

1. Please briefly introduce yourself and the course that you taught.
2. Could you please explain the history of how you made this course from scratch until the course started?
3. How do you decide your course structure, and why?
4. Given the various students' educational background, culture, and goals, what was your strategy to solve this challenge?
5. How do you choose the learning contents for your students? Which one do you emphasize more—local, national, or international content?
6. What was your strategy to improve students' learning?
7. What is the main consideration for your MOOC design, and why?

8. Do you face any challenge in designing your course? If yes, please explain.
9. What is your suggestion in terms of design for other instructors who is going to offer a MOOC in Indonesia/Malaysia?

References

Abas, Z. W. (2015). The glocalization of MOOCs in Southeast Asia. In C. J. Bonk, M. M. Lee, T. C. Reeves, & T. H. Reynolds (Eds.), *MOOCs and open education: Around the world* (pp. 232–242). New York: Routledge. https://doi.org/10.4324/9781315751108-26.

Alario-Hoyos, C., Perez-Sanagustin, M., Cormier, D., & Delgado-Kloos, C. (2014). Proposal for a conceptual framework for educators to describe and design MOOCs. *Journal of Universal Computer Science, 20*(1), 6–23. https://doi.org/10.3217/jucs-020-01-0006.

Al-Atabi, M., & DeBoer, J. (2014). Teaching entrepreneurship using massive open online course (MOOC). *Technovation, 34*(4), 261–264. https://doi.org/10.1016/j.technovation.2014.01.006.

Alderfer, C. P. (1969). An empirical test of a new theory of human needs. *Organizational Behavior and Human Performance, 4*(2), 142–175. https://doi.org/10.1016/0030-5073(69)90004-X.

Alevizou, G. (2015). From OER to MOOCs: Critical perspectives on the historical mediation trajectories of open education. *International Journal of Media & Cultural Politics, 11*(2), 203–224. https://doi.org/10.1386/macp.11.2.203_1.

Ayub, E., & Leong, L. C. (2017). Developing a pedagogy framework for institution-wide implementation of MOOC: A case study from a Malaysian private university. *Advanced Science Letters, 23*(2), 809–813. https://doi.org/10.1166/asl.2017.7464.

Azhari, A. F. (2014). Reconstruction of constitutional tradition in the Indonesian and Malaysian constitutions: A comparison. *Review of History and Political Science, 2*(3&4), 105–125. https://doi.org/10.15640/rhps.v2n3-4a6.

Bali, M. (2014). MOOC pedagogy: Gleaning good practice from existing MOOCs. *Journal of Online Learning and Teaching, 10*(1), 44.

Belawati, T. (in press). Massive online open courses: The state of practice in Indonesia. In K. Zhang, C. J. Bonk, T. C. Reeves, & T. H. Reynolds (Eds.), *MOOCs and open education in the Global South: Challenges, successes, opportunities.* New York: Routledge (to appear).

Berkovsky, S., Kuflik, T., & Ricci, F. (2008). Mediation of user models for enhanced personalization in recommender systems. *User Modeling and User-Adapted Interaction, 18*(3), 245–286. https://doi.org/10.1007/s11257-007-9042-9.

Bonk, C. J. (2016). What is the state of e-learning? Reflections on 30 ways learning is changing. *Journal of Open, Flexible and Distance Learning*, *20*(2), 6–20.

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). Retrieved from http://jl4d.org/index.php/ejl4d/article/view/195/188.

Bonk, C. J., Lee, M. M., Reeves, T. C., & Reynolds, T. H. (2018a). The emergence and design of massive open online courses. 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.

Bonk, C. J., Zhu, M., Kim, M., Xu, S., Sabir, N., & Sari, A. R. (2018b). Pushing toward a more personalized MOOC: Exploring instructorselected activities, resources, and technologies for MOOC design and implementation. International Review of Research in Open and Distributed Learning. https://doi.org/10.19173/irrodl.v19i4.3439.

Bowen, P. W., Rose, R., & Pilkington, A. (2017). Mixed methods-theory and practice. Sequential, explanatory approach. *International Journal of Quantitative and Qualitative Research Methods, 5*(2), 10–27.

Branstetter, G. (2001). *Hot tips mailing list update newsletter*. Hippo Direct. Retrieved from http://www.hippodirect.com/tools/EmailTips.asp.

Carson, S. (2009). The unwalled garden: Growth of the OpenCourseWare Consortium, 2001–2008. *Open Learning, 24*(1), 23–29. https://doi.org/10.1080/02680510802627787.

Caswell, T., Henson, S., Jensen, M., & Wiley, D. (2008). Open educational resources: Enabling universal education. *The International Review of Research in Open and Distance Learning*. https://doi.org/10.19173/irrodl.v9i1.469.

Chauhan, A. (2014). Massive open online courses (MOOCS): Emerging trends in assessment and accreditation. *Digital Education Review, 25,* 7–18. https://doi.org/10.1344/der.2014.25.7-17.

Chonghui, L. (2016, August 7). Revolutionising online education. *The Star*. Retrieved from https://www.thestar.com.my/news/education/2016/08/07/revolutionising-online-education/.

Cross, S. (2013). *Evaluation of the OLDS MOOC curriculum design course: Participant perspectives, expectations and experiences*. Retrieved from http://oro.open.ac.uk/37836/1/EvaluationReport_OLDSMOOC_v1.0.pdf.

Dahlan, A. R. B. A., Juhari, S. S. B., & Shafiee, A. S. B. A. (2015). MOOCs at International Islamic University Malaysia. *International Journal of Computer Science and Information Technology Research, 3*(2), 140–149.

Daradoumis, T., Bassi, R., Xhafa, F., & Caballé, S. (2013). A review on massive e-learning (MOOC) design, delivery and assessment. In F. Xhafa, L. Barolli, D. Nace, S. Vinticinque, & A. Bui (Eds.), *Proceedings of the 2013 eighth international conference on P2P, parallel, grid, cloud and Internet computing* (pp. 208–213). Compiegne: CPS.

de Freitas, S., Morgan, J., & Gibson, D. (2015). Will MOOCs transform learning and teaching in higher education? Engagement and course retention in online learning provision. *British Journal of Educational Technology, 46*(3), 455–471. https://doi.org/10.1111/bjet.12268.

Dillahunt, T. R., Wang, B. Z., & Teasley, S. (2014). Democratizing higher education: Exploring MOOC use among those who cannot afford a formal education. *The International Review of Research in Open and Distributed Learning*. https://doi.org/10.19173/irrodl.v15i5.1841.

Drake, J. R., O'Hara, M., & Seeman, E. (2015). Five principles for MOOC design: With a case study. *Journal of Information Technology Education: Innovations in Practice, 14,* 125–143. https://doi.org/10.28945/2250.

Drost, E. A. (2011). Validity and reliability in social science research. *Education Research and Perspectives, 38*(1), 105.

Ertmer, P. A., & Newby, T. J. (2013). Article update: Behaviorism, cognitivism, constructivism: Connecting "Yesterday's" theories to today's contexts. *Performance Improvement Quarterly, 26*(2), 65–71.

Evans, S., & Myrick, J. G. (2015). How MOOC instructors view the pedagogy and purposes of massive open online courses. *Distance Education, 36*(3), 295–311. https://doi.org/10.1080/01587919.2015.1081736.

Fadzil, M., Latif, L. A., & Munira, T. A. M. (2015). MOOCs in Malaysia: A preliminary case study. *MOOCs in Malaysia: A*

preliminary case study. Retrieved from http://library.oum.edu.my/repository/1022/1/library-document-1022.pdf.

Fan, W., & Yan, Z. (2010). Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior, 26*(2), 132–139. https://doi.org/10.1016/j.chb.2009.10.015.

Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). Achieving integration in mixed methods designs—principles and practices. *Health Services Research, 48*(6), 2134–2156. https://doi.org/10.1111/1475-6773.12117.

Fidalgo-Blanco, Á., Sein-Echaluce, M. L., & García-Peñalvo, F. J. (2016). From massive access to cooperation: lessons learned and proven results of a hybrid xMOOC/cMOOC pedagogical approach to MOOCs. *International Journal of Educational Technology in Higher Education, 13*(1), 24. https://doi.org/10.1186/s41239-016-0024-z.

Firmansyah, M., & Timmis, S. (2016). Making MOOCs meaningful and locally relevant? Investigating IDCourserians—an independent, collaborative, community hub in Indonesia. *Research and Practice in Technology Enhanced Learning, 11*(11), 11. https://doi.org/10.1186/s41039-016-0032-6.

Gené, O. B., Núñez, M. M., & Blanco, Á. F. (2014). Gamification in MOOC: Challenges, opportunities and proposals for advancing MOOC model. In F. J. García-Peñalvo (Ed.), *Proceedings of the second international conference on technological ecosystems for enhancing multiculturality* (pp. 215–220). New York: ACM. https://doi.org/10.1145/2669711.2669902.

Ghazali, N. B., & Nordin, M. S. (2017). The perception of university lecturers of teaching and learning in massive open online courses (MOOCs). *Journal of Personalized Learning, 2*(1), 52–57.

Grajek, S., Bichsel, J., & Dahlstrom, E. (2013). What MOOCs mean to today's students and institutions. *Educause Review*. Retrieved from https://library.educause.edu/-/media/files/library/2013/10/erb1309-pdf.pdf.

Guàrdia, L., Maina, M., & Sangrà, A. (2013). MOOC design principles: A pedagogical approach from the learner's perspective. *eLearning Papers, 33*(4), 1–6.

Haavind, S., & Sistek-Chandler, C. (2015). The emergent role of the MOOC instructor: A qualitative study of trends toward improving future ractice. *International Journal on E-Learning, 14*(3), 331–350.

Hartono, R. (2017). English teachers' responses on the Indonesian MOOC: Technology for autonomous learning (A qualitative survey at Central Java Province, Indonesia). *Language Circle: Journal of Language and Literature, 12*(1), 31–40.

Haug, S., Wodzicki, K., Cress, U., & Moskaliuk, J. (2014). Self-regulated learning in MOOCs: Do open badges and certificates of attendance motivate learners to invest more. In U. Cress & C. D. Kloos (Eds.), *EMOOCs 2014—European MOOC stakeholder summit* (pp. 66–72). Lausanne: Ecole Polytechnique Federale de Lausanne (Swiss Federal Institute of Technology in Lausanne).

Hew, K. F. (2015). Towards a model of engaging online students: Lessons from MOOCs and four policy documents. *International Journal of Information and Education Technology, 5*(6), 425. https://doi.org/10.7763/ijiet.2015.v5.543.

Hew, K. F., & Cheung, W. S. (2014). Students' and instructors' use of massive open online courses (MOOCs): Motivations and challenges. *Educational Research Review, 12,* 45–58. https://doi.org/10.1016/j.edurev.2014.05.001.

Hewindati, Y. T., & Belawati, T. (2017). Massive open online courses as a community services programme. *ASEAN Journal of Open Distance Learning, 9,* 1–11.

Iiyoshi, T., & Kumar, M. S. V. (Eds.). (2008). *Opening up education: The collective advancement of education through open technology, open content, and open knowledge*. Cambridge, MA: MIT Press.

Ismail, N. H., & Seng, L. C. (2016). The bold initiatives of the Ministry of Higher Education Malaysia in preparing Millennial learners to enter the workforce. *International Journal of Advanced Engineering and Management Research, 1*(3), 241–255.

Israel, M. J. (2015). Effectiveness of integrating MOOCs in traditional classrooms for undergraduate students. *The International Review of Research in Open and Distributed Learning, 16*(5), 102–118. https://doi.org/10.19173/irrodl.v16i5.2222.

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods, 18*(1), 3–20. https://doi.org/10.1177/1525822x05282260.

Jordan, K. (2014). Initial trends in enrolment and completion of massive open online courses. *The International Review of Research in Open and Distributed Learning, 15*(1), 133–160. https://doi.org/10.19173/irrodl.v15i1.1651.

Kellogg, S. (2013). Online learning: How to make a MOOC. *Nature, 499*(7458), 369–371. https://doi.org/10.1038/nj7458-369a.

Khalil, H., & Ebner, M. (2013). "How satisfied are you with your MOOC?"—a research study on interaction in huge online Courses. In J. Herrington, A. Couros, & V. Irvine (Eds.), *EdMedia+ innovate learning* (pp. 830-839). Waynesville, NC: Association for the Advancement of Computing in Education (AACE). Retrieved from https://www.learntechlib.org/primary/p/112057/.

Khalil, H., & Ebner, M. (2014, June). MOOCs completion rates and possible methods to improve retention—a literature review. In J. Viteli & M. Leikomaa (Eds.), *World conference on educational multimedia, hypermedia and telecommunications* (pp. 1305–1313). Waynesville, NC: Association for the Advancement of Computing in Education (AACE). Retrieved from https://www.learntechlib.org/p/147656/.

Kim, P., & Chung, C. (2015). Creating a temporary spontaneous mini-ecosystem through a MOOC. In C. J. Bonk, M. M. Lee, T. C. Reeves, & T. H. Reynolds (Eds.), *MOOCs and open education around the world* (pp. 157–168). New York: Routledge. https://doi.org/10.4324/9781315751108-19.

King, C., Doherty, K., Kelder, J. A., McInerney, F., Walls, J., Robinson, A., et al. (2014). 'Fit for purpose': A cohort-centric approach to MOOC design. *International Journal of Educational Technology in Higher Education, 11*(3), 108–121. https://doi.org/10.7238/rusc.v11i3.2090.

Kizilcec, R. F., Pérez-Sanagustín, M., & Maldonado, J. J. (2016). Recommending self-regulated learning strategies does not improve performance in a MOOC. In J. Haywood, V. Aleven, J. Kay, & I. Roll (Eds.), *Proceedings of the third (2016) ACM conference on learning@ scale* (pp. 101–104). New York: ACM. https://doi.org/10.1145/2876034.2893378.

Kolowich, S. (2013, March 21). The professors who make the MOOCs. *The Chronicle of Higher Education*. Retrieved from http://chronicle.com/article/TheProfessors-Behind-the-MOOC/137905/#id=overview.

Li, N., Verma, H., Skevi, A., Zufferey, G., & Dillenbourg, P. (2014). Proceedings of the EMOOCs 2014—European MOOC stakeholder summit. In U. Cress & C. D. Kloos (Eds.), *Why people use social networking sites: An empirical study integrating network externalities and motivation theory* (pp. 88–94). Lausanne: Ecole Polytechnique Federale de Lausanne (Swiss Federal Institute of Technology in Lausanne).

Lin, K. Y., & Lu, H. P. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior, 27*(3), 1152–1161. https://doi.org/10.1016/j.chb.2010.12.009.

Littlejohn, A., Hood, N., Milligan, C., & Mustain, P. (2016). Learning in MOOCs: Motivations and self-regulated learning in MOOCs. *The Internet and Higher Education, 29,* 40–48. https://doi.org/10.1016/j.iheduc.2015.12.003.

Liyanagunawardena, T. R. (2015). Massive open online courses. *Humanities, 4*(1), 35–41. https://doi.org/10.3390/h4010035.

Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A. (2013). MOOCs: A systematic study of the published literature 2008–2012. *The International Review of Research in Open and Distributed Learning, 14*(3), 202–227. https://doi.org/10.19173/irrodl.v14i3.1455.

Liyanagunawardena, T. R., Parslow, P., & Williams, S. (2014). Dropout: MOOC participants' perspective. In U. Cress & C. D. Kloos (Eds.), *Proceedings of the EMOOCs 2014—European MOOC stakeholder summit* (pp. 95–100). Lausanne: Ecole Polytechnique Federale de Lausanne (Swiss Federal Institute of Technology in Lausanne).

Lowenthal, P., & Hodges, C. (2015). In search of quality: Using Quality Matters to analyze the quality of massive, open, online courses (MOOCs). *The International Review of Research in Open and Distributed Learning*. https://doi.org/10.19173/irrodl.v16i5.2348.

Mak, S., Williams, R., & Mackness, J. (2010). Blogs and forums as communication and learning tools in a MOOC. In L. Dirckinck-Holmfeld, V. Hodgson, C. Jones, M. de Laat, D. McConnell, & T. Ryberg (Eds.), *Proceedings of the 7th international conference on networked learning 2010*. Lancaster: University of Lancaster.

Margaryan, A., Bianco, M., & Littlejohn, A. (2015). Instructional quality of massive open online courses (MOOCs). *Computers & Education, 80,* 77–83. https://doi.org/10.1016/j.compedu.2014.08.005.

McAuley, A., Stewart, B., Siemens, G., & Cormier, D. (2010). The MOOC model for digital practice. Retrieved from http://www.elearnspace.org/Articles/MOOC_Final.pdf.

Mesquita, M. A., Toda, A. M., & Brancher, J. D. (2014). BrasilEduca—An open-source MOOC platform for Portuguese speakers with gamification concepts. In *Proceedings of the frontiers in education conference (FIE)* (pp. 1–7). New York: IEEE. https://doi.org/10.1109/fie.2014.7044063.

MIT. (2007, November 28). *MIT Marks OpenCourseWare Milestone.* November 2007 Newsletter. Retrieved from http://ocw.mit.edu/about/media-coverage/press-releases/milestone/.

MIT Open Course Ware, (2012). *Site statistics*. Retrieved from http://ocw.mit.edu/about/site-statistics/.

Mlikotic, R., Parker, B., & Rajapakshe, R. (2016). Assessing the effects of participant preference and demographics in the usage of web-based survey questionnaires by women attending screening mammography in British Columbia. *Journal of medical Internet research, 18*(3), 1–11. https://doi.org/10.2196/jmir.5068.

Najafi, H., Rolheiser, C., Harrison, L., & Håklev, S. (2015). University of Toronto instructors' experiences with developing MOOCs. *The International Review of Research in Open and Distributed Learning*. https://doi.org/10.19173/irrodl.v16i3.2073.

Neuböck, K., Kopp, M., & Ebner, M. (2015). What do we know about typical MOOC participants? First insights from the field. In M. Lebrun, I. de Waard, M. Ebner, & M. Gaebel (Eds.), *Proceedings of the European MOOC stakeholders summit 2015* (pp. 183–190). Mons: Université catholique de Louvain, Belgium.

Nordin, N., Norman, H., Embi, M. A., Mansor, A. Z., & Idris, F. (2016). Factors for development of learning content and task for MOOCs in an Asian context. *International Education Studies, 9*(5), 48–61. https://doi.org/10.5539/ies.v9n5p48.

Opdenakker, R. (2006, September). Advantages and disadvantages of four interview techniques in qualitative research. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, *7*(4). Retrieved from https://pure.tue.nl/ws/files/1948695/Metis202565.pdf.

Oyo, B., & Kalema, B. M. (2014). Massive open online courses for Africa by Africa. *The International Review of Research in Open and Distributed Learning*. https://doi.org/10.19173/irrodl.v15i6.1889.

Pannen, P. (2015). Online lecturers' experience: A reflection. In T. Bastiaens & G. Marks (Eds.), *Proceedings of Global Learn Berlin 2015: Global conference on learning and technology* (pp. 204–212). Waynesville, NC: Association for the Advancement of Computing in Education (AACE).

Ratislavová, K., & Ratislav, J. (2014). Asynchronous email interview as a qualitative research method in the humanities. *Human Affairs, 24*(4), 452–460. https://doi.org/10.2478/s13374-014-0240-y.

Ravichandran, P. (in press). Global trends and policy strategies and their implications for sustainable development of MOOCs in Malaysia. To appear in K. Zhang, C. J. Bonk, T. C. Reeves, & T. H. Reynolds (Eds.). *MOOCs and open education in the Global South: Challenges, successes, opportunities.* New York: Routledge.

Richter, S. L., & Krishnamurthi, M. (2014). Preparing faculty for teaching a MOOC: Recommendations from research and experience. *International Journal of Information and Education Technology, 4*(5), 411–415. https://doi.org/10.7763/ijiet.2014.v4.440.

Sadigh, D., Seshia, S. A., & Gupta, M. (2012). Automating exercise generation: A step towards meeting the MOOC challenge for embedded systems. In *Proceedings of the workshop on embedded and cyber-physical systems education* (p. 2). New York: ACM. https://doi.org/10.1145/2530544.2530546.

Sahyoun, S. (2014, September 26). OpenLearning selected as Malaysia's national MOOC platform. Retrieved from https://www.openlearning.com/blog/OpenlearningComSelectedAsMalaysiaSNationalMoocPlatform.

Sappleton, N., & Lourenço, F. (2016). Email subject lines and response rates to invitations to participate in a web survey and a face-to-face interview: The sound of silence. *International Journal of Social Research Methodology, 19*(5), 611–622. https://doi.org/10.1080/13645579.2015.1078596.

Shah, D. (2017). A product at every price: A review of MOOC stats and trends in 2017. *Class Central*. Retrieved from https://www.class-central.com/report/moocs-stats-and-trends-2017/.

Shah, D. (2019). Year of MOOC-based Degrees: A review of MOOC stats and trends in 2018. *Class Central.* Retrieved from https://www.class-central.com/report/moocs-stats-and-trends-2018/.

Siemens, G. (2012, September). Designing and running a MOOC (in 9 easy steps). Retrieved from http://www.elearnspace.org/blog/2012/09/04/designing-and-running-a-mooc-in-9-easy-steps/.

Szolnoki, G., & Hoffmann, D. (2013). Online, face-to-face and telephone surveys—Comparing different sampling methods in wine consumer research. *Wine Economics and Policy, 2*(2), 57–66. https://doi.org/10.1016/j.wep.2013.10.001.

Teplechuk, E. (2013). *Emergent models of Massive Open Online Courses: An exploration of sustainable practices for MOOC institutions in the context of the launch of MOOCs at the University of Edinburgh*. MBA Dissertation, University of Edinburgh. Retrieved from https://www.era.lib.ed.ac.uk/bitstream/1842/7536/1/MOOCs_MBADissertationTeplechuk_Master.pdf.

Terras, M. M., & Ramsay, J. (2015). Massive open online courses (MOOCs): Insights and challenges from a psychological perspective. *British Journal of Educational Technology, 46*(3), 472–487. https://doi.org/10.1111/bjet.12274.

Thomas, D., & Brown, J. S. (2011). *A new culture of learning: Cultivating the imagination for a world of constant change* (Vol. 219). Lexington, KY: CreateSpace.

Trehan, S., Sanzgiri, J., Li, C., Wang, R., & Joshi, R. M. (2017). Critical discussions on the massive open online course (MOOC) in India and China. *International Journal of Education and*

Development using Information and Communication Technology, 13(2), 141–165.

Tyler-Smith, K. (2006). Early attrition among first time eLearners: A review of factors that contribute to drop-out, withdrawal and non-completion rates of adult learners undertaking eLearning programmes. *Journal of Online Learning and Teaching, 2*(2), 73–85.

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & Health Sciences, 15*(3), 398–405. https://doi.org/10.1111/nhs.12048.

Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. *Psychological Review, 94*(1), 3. https://doi.org/10.1037//0033-295x.94.1.3.

Veletsianos, G., Collier, A., & Schneider, E. (2015). Digging deeper into learners' experiences in MOOCs: Participation in social networks outside of MOOCs, Notetaking, and contexts surrounding content consumption. *British Journal of Educational Technology, 46*(3), 570–587. https://doi.org/10.1111/bjet.12297.

Vest, C. (2001, April 4). MIT to make nearly all course materials available free on the World Wide Web. *MIT News*. Retrieved from http://web.mit.edu/newsoffice/2001/ocw.html.

Wong, B. T. (2016). Factors leading to effective teaching of MOOCs. *Asian Association of Open Universities Journal, 11*(1), 105–118. https://doi.org/10.1108/aaouj-07-2016-0023.

World Bank. (2019). People. Retrieved from http://datatopics.worldbank.org/world-development-indicators/themes/people.html.

Xiong, Y., & Suen, H. K. (2018). Assessment approaches in massive open online courses: Possibilities, challenges and future directions. *International Review of Education, 64*(2), 241–263. https://doi.org/10.1007/s11159-018-9710-5.

Yamada, T. (2015). New component technologies and development strategies of e-learning in MOOC and post-MOOC eras. In T. Zin, J. W. Lin, J. S. Pan, P. Tin, & M. Yokota (Eds.), *Proceedings of the 9th international conference on genetic and evolutionary computing*. New York: Springer.

Ying, W. (2015). A case study: The development of MOOCs in China. In K. Bowon (Ed.), *MOOCs and educational challenges around Asia and Europe* (pp. 9–20). Seoul: KNOU Press.

Yousef, A. M. F., Chatti, M. A., Schroeder, U., & Wosnitza, M. (2014). What drives a successful MOOC? An empirical examination of criteria to assure design quality of MOOCs. In D. G. Sampson, J. M. Spector, N.-S. Chen, R. Huang, & Kinshuk (Eds.), *Proceedings of 2014 IEEE 14th international conference on advanced learning technologies* (pp. 44–48). New York: IEEE. https://doi.org/10.1109/icalt.2014.23.

Zhang, Y. (2013). Benefiting from MOOC. In J. Herrington, A. Couros, & V. Irvine (Eds.), *Proceedings of EdMedia: World conference on educational media and technology* (pp. 1372–1377). Waynesville, NC: Association for the Advancement of Computing in Education (AACE).

Zhang, K., Bonk, C. J., Reeves, T. C., & Reynolds, T. H. (Eds.). (in press). *MOOCs and open education in the Global South: Challenges, successes, opportunities.* New York: Routledge.

Zhu, M., Bonk, C. J., & Sari, A. (2017, October). Instructor experiences in designing and delivering MOOCs in higher education. In *Proceedings of E-Learn: World conference on e-learning in corporate, government, healthcare, and higher education, 2017, Vancouver, BritishColumbia, Canada* (pp. 502–508). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE). ISBN 978-1-939797-31-5. http://www.learntechlib.org/pv/181226/.

Zhu, M., Bonk, C. J., & Sari, A. (2019). MOOC instructor motivations, innovations, and designs: Surveys, interviews, and course reviews. *Canadian Journal of Learning and Technology*, *45*(1), 1–22.

Zutshi, S., O'Hare, S., & Rodafinos, A. (2013). Experiences in MOOCs: The perspective of students. *American Journal of Distance Education, 27*(4), 218–227. https://doi.org/10.1080/08923647.2013.838067.