

**Democratization of Education through Massive Open Online Courses in Asia**

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### **Abstract**

Massive Open Online Courses have been a recent phenomenon in providing large-scale interactive participation and open access to courses online. Depending upon internet availability and familiarity with digital learning practices, this alternative could provide education for many people. This paper explores whether technology such as massive online open courses can democratize education by providing opportunities and access for those who desire formal learning. This paper reviews literature on massive online open courses as well as the benefits and challenges of these courses in adult education. Using computer-based content analysis, this paper also examines recent research (2010-2019) on massive online open courses and the implications of using them to provide widespread access to higher education in Asia. The findings show that offerings in many Asian countries help promote social and economic mobility for their people by providing continuing educational, professional, and personal development through courses online. Yet barriers involving digital literacy, technical capabilities, and language as well as culture, prevent the underserved from pursuing this digital education. This paper provides future research suggestions for collaboration of educational organizations to use massive online open courses in engaging life-long skills for people in Asia.

*Keywords:* MOOC, democratization, education access, technology, Asia

The theme of the 2015 World Education Forum, sponsored by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the Republic of Korea, was “equitable and inclusive quality education and lifelong learning for all by 2030: transforming lives through education” (UNESCO, 2015b, p. 11). The preamble of the Incheon Declaration defined education as an essential and universal right for all humans to create and ensure peace, equipping people for employment with the hope that they have social and economic means for self-sustainability (UNESCO, 2015a, Preamble 5). The report stressed the value of education in promoting gender equality and equity by supporting gender-sensitive policies, improving teacher training, and creating curriculum to decrease discrimination and violence against females in schools (UNESCO, 2015a, Preamble 8). The preamble called for donors from affluent nations to provide funding and resources, such as educational technology, to help educators from all around the world provide quality of learning opportunities for women and the underserved (UNESCO, 2015a, Preamble 9–16).

Based on the World Education Forum and the Incheon Declaration’s mandates, this paper examines a web-based educational offering known as Massive Open Online Courses (MOOCs) to explore as a potential means to increase educational affordability. MOOCs have provided large-scale interactive participation and open access to courses online. Depending on the internet availability in some of these developing countries, this alternative may provide adults a chance to obtain higher education degree. This paper explores whether technology such as MOOCs can democratize education by providing opportunities and access for those who desire higher education and professional development. This paper also reviews literature on MOOCs as well as the benefits and challenges of them in adult education. Specifically, the paper examines recent research (2010-2019) related to the massive open online courses in Asia and applies content analysis to explore themes and associations with technology and its implications in providing education for people in Asia, including the underserved communities.

### **Literature Review**

Since the 1990s, online learning has been on the rise (Alcorn et al., 2015). A recent report from the Babson Survey Research Group reports that distance education has grown dramatically over the past fourteen years (Seaman et al., 2018). In particular, public research universities have increasingly offered MOOCs as a tool for students and senior academic leaders believe that MOOCs will attract potential students (Allen & Seaman, 2013).

Many claim to have coined the term MOOC. Some researchers have stated that it originated during the early 2000s with the emergence of technologies such as open source and open courseware platforms (Bozkurt et al., 2016; Zawacki-Richter & Naidu, 2016). Some sources attribute the term MOOC to Daniel Barwick, an associate professor of philosophy in New York. In 2007, Barwick discussed the need for major universities to find methods to improve learning for large numbers of students (Lederman, 2007; Seaman et al., 2018). Other sources say that Dave Cormier, the Manager of Web Communication and Innovations at the University of Prince Edward Island, coined the term MOOC (Bozkurt et. al, 2016; Hollands & Tirthali, 2014). Cormier pointed out that over 2,000 students from the general public took a 2008 University of Manitoba online course, titled “Connectivism and Connective Knowledge,” that George Siemens and Stephen Downs created, at no cost (Adham & Lundquist, 2015; Alcorn et al., 2015; Bozkurt et al., 2016; Hollands & Tirthali, 2014). The term MOOCs gained even greater popularity after an artificial intelligence online class at Stanford University logged enrollment of over 150,000 students (Alcorn et al., 2015; Waldrop, 2013).

MOOCs have three overall characteristics: they are courses that are *massive, open, and online*. They are massive in that they are characterized by a very large number of enrolled students from the range of hundreds to hundreds of thousands. They are also massive in that they provide large-scale interactive participation for the public. MOOCs are open in that they often use learning platforms that are open-source and they are free or low-cost to anyone who is interested. They are online in that curriculum and assessment are also open so anyone who has an internet connection can join the course. An important attribute of these digital classes is that learners are free to study anywhere without restrictions or limitations (Adham & Lundquist, 2015).

MOOCs are categorized as either “cMOOCs” or “xMOOCs” based on their differing philosophies and methodologies. Connectivist MOOCs, also known as cMOOCs, are courses in which learners use learning platforms such as wikis, social media, blogs, or websites such as Peer to Peer University ([www.p2pu.org](http://www.p2pu.org)) to network and collaborate with one another (Bates, 2014; Smyrnova-Trybulska, et al., 2016). cMOOCs are heavily dependent upon learning communities to create knowledge together (Adham & Lundquist, 2015; Lane, 2016). Important tenets of cMOOCs include autonomy of the learner, diverse demographics of learners, interaction and cooperative learning between participants, and openness in the courses (Bates, 2014). xMOOCs depend upon traditional classroom structures containing specifically designed platform software, video lectures, and automated assessments (Adham & Lundquist, 2015; Bates, 2014; Smyrnova-Trybulska et al., 2016). Coursera, Udacity, and edX courses are examples of xMOOCs. xMOOCs provide alternatives to the traditional university residential model, as students take courses online. xMOOCs focus on a teaching-centered model rather than the learner-centered focus of cMOOCs. Because of the more formal nature of xMOOCs, students who take xMOOCs can earn certificates and they are more popular than cMOOCs because of their instructivist content. Recent online education research examines xMOOCs, and therefore this particular paper focuses on the latter course offerings.

### **Democratization as Comparative Education Framework**

Comparative education is the application of social scientific methods and theories to international issues of education (Epstein, 2002). One issue that comparativists have examined is the role of democratization on education. An underlying notion of democracy is the human right to vote in a political process, to have accessible distribution of financial resources, and to have the essential right to be treated justly (Davis, 2008). Comparative education examines the impact of democratization in local, national, and global communities (McGinn, 1996). In an ideally democratized community, people would be able to freely make their own decisions that would benefit themselves locally and globally. This includes decisions involving education access and opportunities for their citizens. This section examines the political, educational, and social impacts that democratization has on international education.

Comparative education research examines the role of democratization and political participation (Blankenship & Kubicek, 2018; McGinn, 1996; Murati, 2015; Zajda, 2008). Research examines the correlation of active participation in politics when governments promote education access and opportunities (McGinn, 1996; Murati, 2015). Democratization through citizenship education promotes peace and freedom, and schools should be institutions that allow them to work on democratic principles to influence society (Murati, 2015). Comparative education research shows mixed results on the impact of democratization in emerging countries. Countries that attempt to promote democratization have not implemented it well typically have political corruption such as the lack of accountability of public officials

as well as mismanagement of governmental funding (Powell et al., 2016). In Pakistan, for example, educational disparity is widened as the government has not provided adequate funding for education in the countryside versus their urban counterparts (Powell et al., 2016). However, other countries, such as Ukraine, attempt to democratize education through improving technology. One way in which Ukraine's educational system has reduced academic corruption is through data management software to protect privacy, systematize registration, and track grades for their students (Powell et al., 2016).

Comparativists have also researched democratization and its educational impacts in implementing free markets and capitalist ethics (Davies, 2008). Economically, a democratized government would distribute funding for education, incorporate civic education, and decentralize power to local officials (Davies, 2008; McGinn, 1996; Murati, 2015). Democratization in education should include decision-making from all aspects of an educational institution from the faculty, staff, parents, and students (McGinn, 1996; Murati, 2015). A democratic education curriculum incorporates teaching and learning of skills such as direct communication, deliberative process, negotiation, collaborative sharing, critical thinking and problem solving (McGinn, 1996).

Furthermore, democratization in education would also promote equitable education and access to educational opportunities to benefit all social groups (OECD, 2006; Zajda, 2008). Educational equity includes teaching and learning social justice issues, raising consciousness of power relations and providing materials to share voices of all groups of people, especially the marginalized (Sefa Dei & Shahjahan, 2008). Sefa Dei and Shahjahan, research educators in the field of equity and diversity studies, stated that "equity affirms that physical, material, emotional, social, and spiritual well-being of both self and collective... the affirmation arises from the recognition of each other's fundamental freedoms and rights to valued goods and services of society, while at the same time fulfilling accompanying responsibilities" (2008, p. 49). Comparative education research also examines the relationship between democratization and women's rights. These include an increase in participation of women in politics, written policies and laws advancing gender equality, a reduction in gender-based violence, funds for women's health, and alterations in family law to support women (Blankenship & Kubicek, 2018).

### **Methodology**

This paper examines the relationship between online education and democratization of education. In particular, the main research question is as follows: Does online education, specifically using MOOCs, provide for the democratization of education for people in Asia. Democratization is examined in terms of allowing people to have the choice to not only learn, but also to participate in their society, whether it is socially, politically, or economically. This research explores whether people, especially the underserved, can access online education that is effective for their professional and/or personal growth.

This study explores research on the efficacy of massive open online courses to democratization, which was carried out from 2010 to 2019. The research method used is content analysis, which examines the frequency of terms, such as words and phrases, in texts to make inferences about the associations and possible connotations within the documents (Columbia University Mailman School of Public Health, 2019). Content analysis can be both quantitative and qualitative (Seuring & Gold, 2011). However, this study uses qualitative methods as documents and texts are examined. Types of content analysis include conceptual and relational analysis.

Conceptual analysis examines patterns or themes in texts that occur often, whereas relational analysis explores the relationship between concepts and its importance (Columbia University Mailman School of Public Health, 2019). The study explored the conceptual and relational links between massive open online courses, educational access, and opportunities for people.

Initially, the process began as a deductive approach examining whether MOOCs democratize education for people in various countries in Asia. In particular, the initial research question focused on whether some Asian educational ministries or institutions offer low-cost courses that would benefit academic as well as vocational skills to their people. Specific themes such as the history, policies, benefits, challenges, and suggestions emerged in MOOC research on education access and opportunities through manual document analysis. An inductive approach was used to understand the more recent concepts or themes written in the literature from 2015 to the present.

The inductive approach used for this study employed a qualitative content analysis collected from 48 academic books and journals on issues related to MOOCs in Asia. The author hoped to identify MOOC trends relating to education access and opportunities. In particular, the research employed a similar type of methodology to Zawacki-Richter et al.'s (2018) automated content analysis in identifying themes and concepts of MOOC research using the program Leximancer. This text-mining statistical tool carefully extracts themes from documents to locate patterns and trends. Leximancer compiles various texts and documents, codes common themes, and creates a visual concept map creating categories that connect frequently-occurring information from the documents (Leximancer, n.d.). Figure 1 shows the phases of the research process that I conducted:



Figure 1: Phases of the Research Process

Forty-eight academic journals and book chapters were selected using the keywords *MOOCs*, *MOOC*, and *Asia*. These were found in two research databases: *Google Scholar* and *ERIC*. All of the 48 documents were selected using the following criteria: peer-reviewed journal or book chapter specifically focusing on MOOCs in Asia from 2010-2019, written in English, and online full-text accessibility. Limitations of the study include a smaller content analysis sample (48 documents) and the documents selected for analysis only being written in English, which narrowed the range of research able to be analyzed.

In addition to the manual coding of certain democratization themes such as access, opportunity, provision, literacy, mobility, Leximancer breaks down the themes in the 48 documents to categories and relationships between those categories to create a visual concept map.

## Results and Discussion

Figure 2 illustrates the concept map derived from Leximancer, the automated content analysis software. The concept map contains concept circles of frequent words or phrases that are connected to other concepts on the map (Leximancer Pty Ltd, 2018).

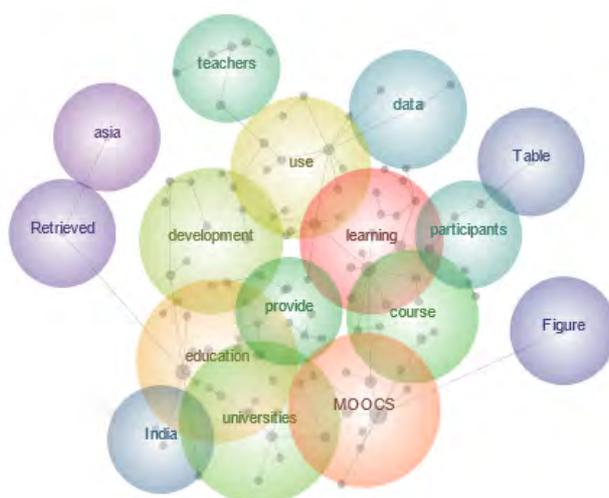


Figure 2: Concept Map of MOOCs in Asia

The concept map generates the highest-level occurring terms. Important terms are heat-colored; for example, the “hottest” important concept appears in red, the next hottest is orange, and continues according to the color wheel (Leximancer Pty Ltd, 2018). In Figure 2, the hottest concepts appear to be *MOOCs* and *learning*, while *education* and *use* are the next most significant terms. Figure 3 below shows the interconnectivity of the concepts. Concepts that appear together often are in the same pieces of documents (Leximancer Pty Ltd, 2018).

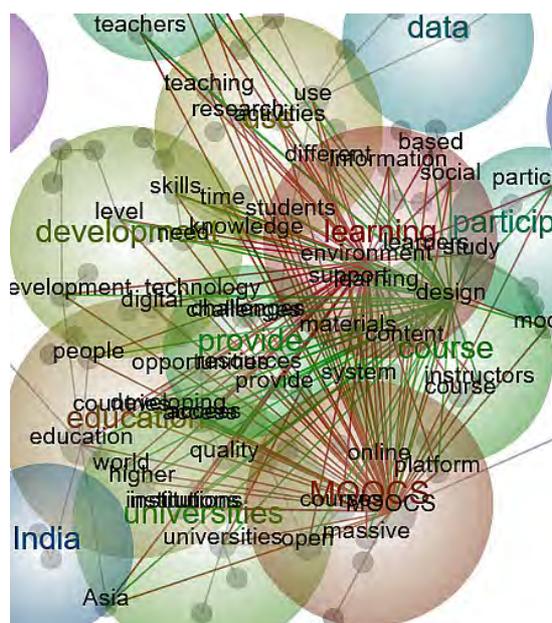


Figure 3: Relationships between Concepts

From Figure 3, the *learning* and *MOOC* red circles appear to be very connected with other concept circles as seen with the dark red lines. The *learning* and *MOOC* circles, which are the hottest or most-frequented concepts connect to other concept terms of *development*, *provide*, *courses*, *education*, *universities* and *use*. This concept summary indicates the relative importance of *education*, *learning*, and *MOOCs* as compared to other terms. From this analysis, three themes have emerged because of the text-mining analysis and the concept map that relates to democratization of education: miscellany of MOOCs in Asia; provision and development of MOOC education in Asia; and opportunities and barriers of Asian learners to access MOOCs.

### **Miscellany of MOOCs in Asia**

From the content analysis, the *MOOC* concept circle is the central theme of the literature. The sub-themes within this concept circle include terms such as *online*, *courses*, *open*, *platform*, and *massive*. The text-mining analysis connected the importance of MOOCs in Asia and the variety of MOOC offerings provided in countries such as Malaysia, India, Nepal, and China.

Some Asian universities have used MOOC platforms such as Coursera, edX, and Udacity, created by the collaboration of U.S. top universities and companies (Liyanagunawardena et al., 2013; Chen, 2013; Beigi et al., 2015). Countries such as India and Brazil contribute 14 percent of enrolled students in edX, Coursera, and Udacity (Kanwar, 2014). The National University of Singapore joined Coursera, while Nanyang Technology joined iTunes U (Chen, 2013). In 2012, edX announced its growing network to many international universities, including Asian universities, to meet global demand and increase access to quality education (edX, 2013). Asian universities include Tsinghua University and Peking University in China, the University of Hong Kong and Hong Kong University of Science and Technology in Hong Kong, Kyoto University in Japan, and Seoul National University in South Korea (edX, 2013).

As global edX, Coursera, and Udacity platforms have their online courses in English, many countries in Asia have adapted to create MOOCs for their own cultural and linguistic context (Buhl & Andreason, 2018). Some nation-states have prioritized MOOCs as part of their national education plans (Buhl & Andreason, 2018). Countries that have created local MOOCs as part of their educational strategies include Taiwan, China, Indonesia, Japan, Malaysia, Philippines, South Korea, Singapore and Thailand (Chen, 2013; Laurillard & Kennedy, 2017; Sari et al., 2019). In 2013, Tsinghua University founded the XuetaangX platform in China, which also is part of the Chinese Association of Higher Education (Laurillard & Kennedy; Xuetaangx, 2019). In Indonesia and Malaysia, MOOCs have been derived from government initiatives to create access to education for their people, especially when brick and mortar institutions are limited (Norman et al., 2015; Sari et al, 2019). In 2015, the Malaysian Ministry of Education collaborated with four public universities, National University of Malaysia, University Putra Malaysia, MARA University of Technology, and University of Malaysia Sarawak, to launch Malaysia MOOCs (Nordin et al., 2016). The Ministry of Education and Culture, along with Ciputra University and Universitas Terbuka, collaborated in creating MOOCs in Indonesia (Sari et al., 2019). In Japan and Korea, JMOOCs and KMOOCs were created by an inter-organizational conglomerate of academic, business, and governmental institutions (Shigeta et al., 2017; Upadhyay & Anandpara, 2020.). Similar to the East Asian counterparts, ThaiMOOCs, launched by universities and governmental initiatives in Thailand, had their aim to develop life-long opportunities, innovation, and quality education for diverse groups of people (Chaimin, 2019). SWAYAM, otherwise known as Study Webs of Active-Learning for Young Aspiring Minds, “is a programme initiated by the Government of India and designed to achieve the three cardinal principles of education policy including access, equity and quality...to take the best teaching learning resources to all, including the most

disadvantaged” (SWAYAM, 2019, para. 1). Furthermore, Katmandu University in Nepal has recently piloted a MOOC course on basic programming which is one of the first locally developed MOOCs in the country (Ghimire, 2018; Singh, 2018).

### **Educational Development and Provision of MOOCs**

In the concept map of MOOC academic literature from 2010-2019, the *education* term emerged. The content analysis of the research literature describes the MOOC impact on providing education opportunities and access to people. In implementing the analysis and interpretation of each the 48 academic journals and book chapters in detail (see Figure 1: Step 4), another theme that emerged is the educational development and provision of MOOCs. Factors that can hinder democratization of education of MOOCs to those people are the physical infrastructure of technical capabilities and digital literacies of people understanding how to use MOOCs.

In India, where there could be possibly 40 million extra university student spots needed by the next decade, MOOCs in SWAYAM can help learners to achieve as much as 20 percent of their educational curriculum (Buhl & Andreasen, 2018; Chatterjee & Nath, 2014). MOOC advocates in India hope that online learning can help increase the literacy rates and help learners with employment training (Upadhyay & Anandpara, 2020). The rise of Indonesian MOOCs, offered at higher education institutions such as Ciputra University and Universitas Terbuka, aim to help the underserved to find quality education at an affordable and accessible cost (Sari et al., 2019). MOOCs can also offer benefits to Nepali society such as open and free learning opportunities, affordable and inclusive education, and developing Nepalese teacher professional development (Ghimire, 2018; Singh, 2018).

**Technical capabilities.** According to Liyanagunawardena, Williams, and Adams (2013), access to educational technology encompasses the physical, motivational, and intellectual knowledge of understanding how to use digital devices. Some studies find a disparity for less privileged groups in obtaining internet access in various parts of the world. For some countries in Asia, internet access can be a challenge because of poor national infrastructure. For example, parts of Sri Lanka have limited electricity and their internet centers tend to be in more urban areas (Liyanagunawardena et al., 2013). As recently as in 2017, internet usage in Nepal was less than 50 percent (Ghimire, 2017). Furthermore, Southeast Asian learners cannot afford electronic equipment to enroll in MOOCs (van de Oudeweetering & Agirdag, 2015).

Access for women is more restricted where the internet is sparse. Women in Asia often go to public libraries rather than internet cafes because they perceive the former as safer (Laurillard & Kennedy, 2017). According to the World Bank, women also have less access to certain technology devices, as over 1.7 billion women in low- and middle-income countries do not own mobile phones (World Bank, 2016). Furthermore, women have less access due to cultural norms and pressures from families and friends not to use the internet (Laurillard & Kennedy, 2017).

Slow internet connection poses an obstacle for all learners accessing MOOCs that contain large files or that stream videos (Liyanagunawardena et al., 2013). In a survey conducted with Nepalese engineering students who took the MOOC course entitled “Fundamental Concepts of C Programming”, the students stated that slow internet access was a main barrier to MOOC participation and completion (Shakya & Shrestha, 2018). Poor internet connection, especially in small towns and rural regions, can disrupt learning in various parts of the world (Adham & Lundquist, 2015). However, some governments and other organizations have developed

MOOCs to support low-bandwidth connections. Murugesan, Nobes, and Wild (2017) observed a MOOC course for researchers from developing countries. This research and writing course was delivered in a Moodle site of low-bandwidth methods including high-quality textual content and videos or graphics that were low in size. Over 2,830 learners from over 90 countries participated in the course. In this low-bandwidth methods course, they found that over half of the learners were from the Majority World including Asian countries such as Sri Lanka, India, Nepal, and the Philippines (Murugesan et al., 2017). Over 45 percent of the participants in the MOOC research course were women. Furthermore, contrary to the typical findings, the women had a higher completion rate in relation to the men, engaging better in discussion forums and reflective dialogue, which is an indicator of digital literacy as well (Murugesan et al., 2017).

**Digital literacy.** Access to technology does not equate with proficiency of use. A young Sri Lankan female teacher once responded in an interview about using MOOCs that although she had good internet connectivity and technological resources, she did not know how to use them (Liyaganawardena et al., 2013). Her response underscores that for women and the underserved in Asia, digital literacy is vital to the sustainability and completion of MOOCs. Digital literacy includes information processing, competently navigating online tools, building community through discussion forums, self-discipline in reading and completing assignments, tasks, and quizzes, and having the ability to self-learn (Trehan et al., 2017). For many nations in the world, computer literacy is still in the early stages. A little over 20 percent of Sri Lankan adults are proficient at using digital technology (Liyaganawardena et al., 2013). In Chinese and Indian universities, those with information literacy, that is, better internet skills and the desire to learn through videos, have been more likely to succeed in MOOCs than those who were not as technically able (Trehan et al., 2017). Even educators and students who have been exposed to technology have a difficult time in understanding the process of implementing or using MOOCs. In India, teaching assistants who helped the lead instructors for the SWAYAM online courses have a challenging time with technical skills and handling of MOOCs (Buhl & Andreasen, 2018). For Nepalese students who took the pilot MOOC course in Kathmandu University, they expressed confusion regarding the assignment expectations such as posting discussions that they eventually dropped out of the course (Ghimire, 2018). To counteract these issues with digital literacy, recommendations for improvement in MOOC retention include clear instructions with modeling examples from the instructor and technology orientation (Ghimire, 2018). This is because prerequisite knowledge of using MOOCs, such as background knowledge and programming skills, poses additional barriers for some women and the underserved in Asia in taking MOOCs (van de Oudeweetering & Agirdag, 2015).

### **Lingual/Cultural/Social/Economical Factors for Asian Learners of MOOCs**

Another category, which emerged in the concept map analyzing MOOCs in Asia documents from 2010-2019, is *learning*. The *learning* concept examines the social, cultural, and physical aspects of the learners and it appears that the design and pedagogy of MOOCs influences them. Cultural differences of Asian online learners can be a factor in MOOC education, as well as language, communication tool use, plagiarism, time zone differences, instructional styles, language and other cultural factors (Chen, 2013).

**Language and culture.** Not only do women learners and the underserved in Asia need to have sufficient digital literacy, they need to understand English. Many MOOCs originated in America and Europe where their universities and providers created the learning platforms (Laurillard & Kennedy, 2017). Only a small proportion of students in the Majority World are multilingual (Liyaganawardena et al., 2013). This creates obvious challenges, as seen in MOOC creation in Nepal. This includes difficulty in the comprehension of the video lectures

and texts, the pace and tone of the lecturers, creating discussion posts, and understanding assessment as English is not their first language (Ghimire, 2020).

Culture also plays a role in completing online courses. MOOCs have certain discourses such as instructions, humor, or content in the discussion forums that other diverse learners may not understand (Liyanagunawardena et al., 2013). In some cultures, quality learner engagement involves direct teacher to student interaction (Laurillard & Kennedy, 2017). Intercultural communication also is a factor as students from collective and high context cultures, like those in Asia, stated problems in understanding their classmates' viewpoints without visual signals (Bayeck et al., 2018). In a required Malaysian Ethnic Relations MOOC undergraduate course, students expressed that having Malaysian instructors who speak the same language as them is a factor in helping them understand the video lectures better as the teachers can identify with their local culture (Nordin et al., 2016). In many countries in Asia such as Nepal and India, traditional face-to-face classroom, rote learning and plagiarism is engrained in the education context; thus, instructors of MOOCs need to be aware of the challenges they faced when assessing their students (Ghimire 2020; Mohapatra & Mohanty, 2017).

Suggestions to improve the quality of MOOCs to their diverse learners include providing inclusive guidelines to respectively post on discussion forums, a variety of audio-visual material, and flexibility on assessments to attract those with different learning styles (Liyanagunawardena et al., 2013; Laurillard & Kennedy, 2017). Furthermore, learning engagement would increase if MOOCs enabled their diverse learners to share their personal stories with one another, using local and global contexts to help them understand the course content.

Regarding gender, MOOCs have the potential to offer and expand educational opportunities for women in Asia and the Majority World (Alcorn et al., 2015; Liyanagunawardena et al., 2013). Liyanagunawardena et al., (2013) state that MOOCs can benefit females in nations where access to education would be limited, such as in Afghanistan or in Nepal. Video conferencing on the social value of MOOC based discussions can provide women access to more senior global faculty than they would have in their local classroom (Laurillard & Kennedy, 2017).

MOOCs have the potential to democratize education for people with limited learning opportunities, as universities, commercial, government, and non-profit providers realize that these open online courses cannot be a "one-size-fits-all" platform. Creators of MOOCs need to take into account the context of the learners, including the national infrastructure, schooling, technical educational background, language, and culture.

**Economic and social mobility.** As countries in Asia seek more labor, MOOCs can be a viable option for women and those who cannot afford traditional higher education to improve job-related skills. A large number of Indian learners have signed up for edX MOOCs at Harvard, MIT, and Penn (Alcorn et al., 2015). About 20 percent of the students in these MOOC courses are women and those in rural residences of India (Alcorn et. al, 2015). Many Indian learners have used MOOCs for professional development, to improve their current job skills, or to transition to new positions, primarily in STEM fields. In a 2014 survey of 780,000 learners who completed a Coursera MOOC course from approximately 212 countries, 72 percent of the survey respondents chose career benefits and 61 percent reported educational benefits (Zhenghao et al., 2015). Interestingly, people from Asia, people with lower socioeconomic status, and those with less education reported they benefited more from MOOCs than their elite

counterparts (van de Oudeweetering & Agirdag, 2015; Zhenghao et al., 2015). The former respondents stated that completing a Coursera MOOC assisted them with tangible career benefits such as getting a raise, finding a new job, or improving upon a skill for a job promotion (Zhenghao et al., 2015). Furthermore, the survey responders from the Majority World such as those in Asia and people with lower socioeconomic status said they believed that the MOOCs helped them improve their educational output, (i.e., transferring the MOOC to academic credit or attaining knowledge). Other studies support the trends that when learning job-specific skills, learners from the Majority World such as those in the Philippines were more likely to complete MOOCs than those in the Western countries (Garrido et al., 2016; Murugesan et al., 2017).

MOOCs that cater towards women and the learners of the Majority World through their content are likely to have their learners complete their courses. For example, in a MOOC entitled “Understanding Dementia”, learners can retake assessments as many times as necessary for them to understand the content (van de Oudeweetering & Agirdag, 2015). Another MOOC known as “Web Science” contains materials that non-native English learners can understand (van de Oudeweetering & Agirdag, 2015). In a MOOC on research writing for researchers in developing countries, the low-bandwidth materials in the course and the asynchronous flexibility of the course allowed female learners to complete the course, especially as many of them have additional work and familial responsibilities (Murugesan et al., 2017).

Economic and social mobility are motivating factors for some women enrolling in MOOCs. Other motivating factors include the participation of a friend or colleague in an online platform (Bayeck, 2016). A higher number of women took a Penn State Coursera MOOC course on “Creativity, Innovation, and Change”. The course attracted participants from over 82 different nations, including China, the United States, India, Canada, Mexico, Brazil, Nigeria, Egypt, France, and Germany (Bayeck, 2016). Over 90 percent of the female respondents mentioned that they took the course because of their friend. Eighty-one percent of respondents identified job-related skills and connection with others as reasons that they took the course (Bayeck, 2016). In terms of female participation, group work and collaboration were important factors for women to complete the courses, especially as the topic of the course was engineering.

### **Conclusion and Future Research**

MOOCs are open, low-cost, and unrestricted for any learner to enroll in them. Educators have predicted that internet platforms would result in democratization of education by providing educational access for all. They further have identified MOOCs as allowing those who have been excluded from residential higher education to participate in online courses (Adham and Lundquist, 2015). In reviewing the literature and engaging in qualitative content analysis on the impact of MOOCs on the democratization of education in Asia, researchers have examined the effects of technical capabilities, digital literacies, and language, as well as culture, on women and the less privileged potentially using MOOCs for educational opportunities. Many Asian universities have used a variety of MOOCs as part of their national plans to provide opportunities for their people to receive higher education or continuing professional development. Countries that have higher enrollments of people using MOOCs include those that have solid technical infrastructure and educational policies encouraging their people to enroll in MOOCs as part of their educational requirements. Recent research on MOOCs in Asia still shows a disparity of enrollees who are either male, people in their 20s-30s, those who live in the urban areas, middle-to-upper social class, and learners who are competent in English. Yet more countries in Asia, such as in Nepal, Indonesia, and Malaysia are providing more

internet availability and educational curriculum that provide digital literacy and MOOCs in their local language to help the underserved with support to use MOOCs.

Multitudes of learners from around the world have enrolled in MOOCs. However, not all learners have taken advantage of the online learning platforms. To make MOOCs even more accessible to females and the Majority World, MOOC providers in the United States and abroad should collaborate with various organizations such as governments, multinational corporate sponsors, non-government organizations and community centers to work for underserved groups to maximize the potential in providing education to these groups. The democratization of education through MOOCs requires partnering organizations to improve the MOOCs infrastructure, offer better broadband internet connectivity, and equip the less privileged groups with sufficient digital literacy to enable them to maximize the benefits MOOCs have to offer. MOOC providers should also research and take the time to invest in culturally and linguistically responsive content for their potential clients. As populations in the Majority World increase, including those in Asia, the need to utilize technology will rise. Traditional brick and mortar higher education institutions will not be able to accommodate such multitudes of people. In order to meet the 2015 World Education Forum's aim of equitable and inclusive quality education and lifelong learning for all by 2030, local governments, grass-root organizations, and donors from affluent nations need to provide ample technological and educational resources to create more MOOCs for women and those in the Majority World. Further research will examine the extent to which global-based MOOCs such as Coursera or edX, and local-based MOOCs in China, India, Indonesia, Japan, Malaysia, Nepal, Thailand, and other Asian nation-states have altruistic intentions of providing educational access, equity, and opportunity for women and the underserved in Asia.

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