6-2016

Massive Open Online Courses and Educational Equality in China: A Qualitative Inquiry

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Abstract: *Although Chinese governments are devoted to the improvement of education, considerable defects such as inequality in education and an increase in educational costs exist in the current education system of China. Massive Open Online Courses (MOOCs) assume the hope of resolving the educational inequality in China with the potential of empowering a diverse population with free, open access to prominent educational resources. This qualitative research project applies narrative inquiry to examine Chinese MOOCs learners' perceptions of their lived experiences and how MOOCs attend to the problems in Chinese education. The inquiry includes triangulated data in the form of interviews, observations, and online posts. The research finds that MOOCs have limited influence on the issue of educational inequality in China. By identifying the perceptions that Chinese learners have towards MOOCs, this study provides significant implications for the adoption and diffusion of MOOCs in China.*

Keywords: MOOCs; educational equality; learners' perceptions; Chinese educational system

1. Introduction

Education is closely related to economic growth and social democratization, thus the Chinese government has invested enormous efforts to improve education (Rong & Shi, 2001). In spite of these efforts, striking issues remain such as inequality in education (Li, Sato, & Sicular, 2013; Rong & Shi, 2001; Song & Burgard, 2011) and increased educational cost (Chen, 2013). The inequality in education is particularly problematic for gender, (Song & Burgard, 2011), ethnicity (Li et al., 2013; Rong, 1996), region (Rong & Shi, 2001), and disability (Fan, Su, & Gill, 2010). In fact, inequality in education and an increase of educational costs have been a worldwide controversial issue in education (Barman, 2011; Cooray & Potrafke, 2011; Troyna, 2011). While some empirical research in this

area explores solutions to problems, there is very little qualitative work focused on the potential of new educational innovations as a solution to these inequities.

Massive Open Online Courses (MOOCs) create hype in China as an educational innovation that potentially extends the access to remarkable educational resources to a larger population. Despite the traditional respect for traditional university, MOOCs have been increasingly popular in China and provide hope for bridging the gap in educational equality. However, MOOCs were originally rooted in native English environments and the language barrier for non-English speakers was likely to restrict its expansion. In addition, cultural awareness further impacted Chinese learners' adaptation of the online course delivered in a foreign language (Goodfellow & Lamy, 2009; Liu, Liu, Lee, & Magjuka, 2010). Despite the boom of MOOCs in China, the effectiveness of MOOCs has rendered massive doubts about whether MOOCs can resolve the existing inequality in the current Chinese educational system. MOOCs embrace the notion of student-centeredness so leaners' perceptions directly speak to the effectiveness of MOOCs (Liu et al., 2014; Tang, Wang, Qian, & Peck, 2016). Therefore, this explorative research investigated Chinese learners' perceptions of students' learning experiences with MOOCs through qualitative methods, primarily narrative inquiry (Clandinin,2006; Connelly & Clandinin, 1990; Creswell, 2005; Kvale & Brinkmann, 2009). From Chinese learners' perspectives, the inquiry seeks to add to the implications of approaching the educational equality with the adoption of MOOCs.

2. Literature Review

2.1. Educational Inequality in China

Education is a system devoted to providing knowledge and skills so people can become well-trained professionals and workers, well-balanced citizens, and active participants in an increasingly democratic society (Rong & Shi, 2001). However, inequality in education has become an increasingly controversial issue in China. Chinese citizens who are living in rural regions, poor, female, disabled, or minorities, simply have unequal access to high quality educational experiences (Li et al., 2013; Song & Burgard, 2011).

Chinese education resources are allocated upon the local economy (Qian & Smyth, 2008) and in many remote regions and rural areas of China, the education is deplorable, and indeed "deteriorating even further" (Rong & Shi, 2001, p. 107). Meanwhile, unequal economic development has hindered educational attainment across diverse groups. Educational expenditures vary widely among regions: educational budgets in poorer and more remote areas cover a smaller portion of local government finance than that of the central government (Rong & Shi, 2001). Furthermore, gaps in the regional economy intensify the inequality of educational opportunity between genders. Rong and Shi (2001) point out that a family's economic level largely determines children's schooling because parents in poorer households expect daughters to perform family duties and support their brothers who attend school. Besides gender, inequality can also be found in other marginalized groups such as minorities and disabled persons (Rong, 1996). Scholars reveal that people with various disabilities in China are much more illiterate than the general population (Epstein, 1992; Rong & Shi, 2001). Likewise, minorities are reported to have higher illiteracy rates than Han, the largest ethnic group in China (Kwong & Xiao, 1989). Even worse, recent years have seen an increase in educational costs (Chen, 2013) and more Chinese students cannot

afford tuition and drop out of school to find a job.

Inequalities in the current Chinese educational system have brought about unequal educational access for students. In addition, the National College Entrance Examination (NCEE) system and the lack of an efficient life-long learning system in China have also intensified this inequality (Yao, 2009). Most students who fail to enroll in a college probably never return to campus again. Yao (2009) further argues that the gap between levels of teachers' expertise is another factor that worsens inequality. The Chinese government has initiated several programs to deliver high-quality courses to those who otherwise would have no access including the National Pilot Curriculum (NPC) and the Quality Video Open Course (QVOC). QVOC was initiated more recently in 2011 and delivered free, open videos of college-level courses to the public (Huang, et al., 2014; Xie, Yin, Wang, Li, & Peng, 2013). However, QVOC did not equip a constantly available support system for learners so that the initiative failed to significantly resolve the issue of educational inequality.

2.2. MOOCs and the Promise of Universal Education

In fact, inequality in education is a concern for worldwide governments and educational institutions (Barman, 2011; Cooray & Potrafke, 2011; Troyna, 2011). As a result, educators endeavor to leverage technological advances to improve the situation. For example, the advancement of Web technologies enables MOOCs to provide free, open online courses for large enrollments from all over the world. MOOCs first emerged on the public horizon in 2008 when George Siemens and Stephen Downes started to "facilitate" the course, Connectivism and Connective Knowledge (CCK08) (Downes, 2008). Since then thousands of open online courses have been developed to give massive learners free access to educational resources from prestigious academic institutions. Up until July 21st, 2013, Coursera, one of "the big three" providers, enrolled more than 4.1 million registered online learners (Wang, 2014). MOOCs prevail in the openness and free access to prominent educational resources, thus educators intend to prioritize universal education via MOOCs (McAuley, Stewart, Siemens, & Cormier, 2010).

MOOCs have been considered a disruptive innovation to the current higher education system (Yuan & Powell, 2013). However, given that MOOCs are originally rooted in in native English-speaking environments, cultural barriers are never dissolved for Chinese learners to take MOOCs. Chinese students' online learning experience in a foreign language environment is a process of cultural negotiation and reconstruction (Wang, 2006). Non-Chinese MOOCs, accounting for a larger share of current market bring about cultural conflicts for Chinese learners in terms of the language barrier (Liu, Liu, Lee, & Magjuka, 2010) and the disparity in cultural belief (Cai, Huang, & Song, 2008; Downes, 2013; Ku & Lohr, 2003; Zhang, 2007).

First, language barriers increase the probability of miscommunication and misunderstanding in Chinese learners' online learning experience with MOOCs (Liu et al., 2010). They tend to develop a sense of marginalization or sometimes alienation in a course delivered in a foreign language (Shattuck, 2005). Those negative emotions, in turn, result in learners' decreased course interactions and further engender unsatisfactory learning outcomes as making connections with learners and instructors underlies learning in MOOCs (Lindsey, Rhoads, & Lozano, 2015).

Further, those non-Chinese MOOCs deliver the cultural patterns incongruent to the traditional Chinese culture. Chinese culture endorses masculine values where the success is closely tied with competition and achievement (Cai, Huang, & Song, 2008). Inspired by the masculine values, assessment in Chinese education primarily depends on examinations in which learners outperform to gain better social status (Zhang, 2007). In contrast, MOOCs normally focus more on assessing learners' mastery instead of judging students' performance by scores. This difference in the assessment further influences whether the Chinese educational market accredits the MOOC certificate. If the MOOC certificate is not recognized for future career or schooling, some Chinese learners are more likely to be demotivated to complete MOOCs. In addition, Chinese culture reflects a rather high power-distance relationship (Hofstede, 1986) and this relationship shapes a teacher-dominated and centrally-organized pedagogical culture in China. Nonetheless, MOOCs embrace leaner-centered pedagogy, where in teachers serve more as a facilitator rather than dominate the course as a place for information dispensation through traditional lecture-type modalities.

Largely because of these disparities in cultural practices, learners with different cultural backgrounds are likely to develop distinct perceptions of MOOCs. Currently, Chinese educators, industries, and governments are demonstrating a strong interest in MOOCs and are exploring appropriate strategies to resolve existing inequitable distribution problems in Chinese education (Huang, et al., 2014; Wang, 2014). The empirical findings about MOOCs in China are rising, but there is a gap of learners' own voices in the existing literature. This topic is truly an issue that deserves a more in-depth investigation to improve the educational equality in China. Therefore, to identify whether MOOCs are the panacea to Chinese educational equality, the research examine Chinese learners' perceptions of MOOCs through the questions as below.

1. What are Chinese learners' perceived experience of learning with MOOCs?

2. What are Chinese learners' perceptions of MOOCs as a panacea to educational equality in China?

3. Methodology

This qualitative research applied narrative inquiry to examine Chinese learners' perceptions of MOOCs because it enabled researchers to understand the process of how people frame personal experience to clarify the meaning of each action or event in real life (Schram, 2006; Creswell, 2007). Further, narrative inquiry addresses "not only meanings and motives, but also how people connect those meanings and motives to the ways people structure their experience" (Schram, 2006, p.105).

3.1. Participants and Contexts

MOOC Academy was the largest public MOOC community in China that gathered a number of MOOC learners, producers, designers, and instructors. Members actively exchanged their course reflections, shared course notes, recommended excellent courses, notified upcoming course availability, sought online help, and organized offline events around MOOCs. The daily posts in the forum were estimated to be more than 1000. The researchers thus recruited participants from users of MOOC Academy.

Purposive sampling with an emphasis on variation was used to recruit participants in this study (Creswell, 2005) because variation

exemplified any possible relations between the real existence and participants' personal perceptions (Raish, Tang, & Carr-Chellman, 2013). The inclusion criteria included: (a) active learners in MOOC Academy, (b) learners registered at least one MOOC and stayed for at least three weeks in that MOOC, and (c) learners were from regions where the local gross enrollment ratio of higher education was below the average. The primary investigator lurked into MOOC Academy for months to identify the active learners so as to ensure they potentially obtained the enthusiasm towards MOOCs and had known about MOOCs. In addition, three weeks were a relatively valid period for a learner to develop a basic understanding of MOOCs (Veletsianos, Collier, & Schneider, 2015). Finally, gross enrollment ratio of higher education represented the ratio of the local number of population presently attending college and the number of college-aged population in that area. The researchers targeted learners from those areas where higher education was relatively poorly accessible to tap into the deep reality of the educational inequality. Through months of involvement, the researchers selected thirteen members and sent recruitment invitations with a demographic survey to them. Those members all replied to the researchers, but only eight of those members were selected based on the inclusion criteria. The researchers identified diverse variation among them (see Table 1). For participants' privacy, the researchers assigned each of them an alias as the identification in the research.

3.2. Data Collection

The researchers conducted triangular data collection for the rigor of the study (Schram, 2003; Creswell, 2005) including (a) semi-structured interviews with each of eight participants from MOOC Academy, (b) observations of two of eight participants' lived learning experiences, and (c) online posts collected from MOOC Academy (Creswell, 2005; 2007).

The researchers scheduled a semi-structured interview with each of the participants. The interview was conducted in Chinese and lasted for 45-60 minutes. Researchers ensured the interview questions accorded with the research purpose including participants' learning experiences with MOOCs and their perceptions of MOOCs as a panacea to educational equality. Each category contained five prepared questions, but additional questions were utilized where needed as appropriate follow ups. The interview was audio-recorded upon participants' consent. Once all the interviews were completed, the primary investigator transcribed all of the recorded documents in Chinese and then translated the Chinese transcriptions into English for the data analysis.

In addition, two of eight participants approved researchers' request of observing their learning experience with MOOCs. The researchers scheduled a one-hour appointment with two participants. The observation mainly attended to activities like watching/skipping video lectures, taking notes, working on assignments and tests, and activities unrelated to learning. The primary investigator took field notes and avoided communication with each participant under observation.

Finally, researchers collected online posts from the forum of MOOC Academy. Researchers collected 114 topics in total and classified them in four categories including collaborative learning (e.g., forming a learning group, searching for classmates, problems about the course, and complaints of course/instructor/platform), frequent challenges (e.g., lack of Chinese subtitle, problems in video loading and playing, and course

certification), sharing resources (e.g., MOOC news, newbie guide, reflection, course notes, and recommendation of course selection), and open discussion (e.g., community announcement and research request). The researchers classified those posts and translated them into English as an additional artifact in making sense of the potential role of MOOCs in Chinese society.

3.3. Data Processing, Coding, and Analysis

The researchers applied inductive thematic analysis (Braun & Clarke, 2006) to process the data, initiating a process of open coding of the highlighted elements to identify patterns in the data set. According to Braun and Clarke (2006), inductive thematic analysis approach did not require the research

to adhere to any pre-existing theoretical framework. In addition, inductive thematic analysis empowered the researcher with the flexibility of discovering themes and patterns in the data. Thematic analysis consisted of six phases including "familiarizing yourself with your data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and finally producing the report" (Braun & Clark, 2006, p.87). Researchers reviewed all of the translated artifacts including interview transcripts, online posts, and field notes to become familiar with the data. Researchers then started to systematically generate initial codes. This phase produced a series of patterns such as scenarios of learning in MOOCs, opportunities and challenges for learning MOOCs, perceptions of learning experiences, current

Table 1. Participants' Demographics

Alias	Age	Gender	Hometown	Employment Status	Highest Degree
Cherry	24	Female	Shanxi	Full-time job	Master
Crystal	24	Female	Henan	Graduate student	College
Evans	21	Male	Jilin	College student	High School
Larry	17	Male	Henan	High school student	Middle School
Martin	29	Male	Gansu	Full-time job	College
Marie	29	Female	Inner Mongolia	Graduate student	Master
Tommy	22	Male	Sichuan	College student	High School
Yolanda	21	Female	Shandong	College student	High School

problems of Chinese education, educational innovation, and expectations of MOOCs in China. With constant comparison of those patterns (Glaser & Strauss 1967), specific themes, including learning experiences, educational equality, and future expectation of MOOCs, emerged from the coding of online posts, transcriptions, and field notes.

Further, researchers compared participants' responses with those from selected literature, linking to existing problems for contemporary education in China. MOOCs were described by participants to extend insights into traditional online education in ways of "a new supplement to traditional pedagogy," "a direct access to well-known professors", and "free, self-paced learning style." Meanwhile, challenges that participants encountered in MOOC learning experiences, such as a lack of prior knowledge and a burden of heavy workload, provided additions to the common problems in online learning revealed in previous research (Liu et al., 2010; Shattuck, 2005; Wang, 2006).

3.4. Positionality and Ethical Issues

Qualitative research findings depend on the researcher's "ways of seeing" (Schram, 2006, p. 94). To represent the authentic truth, the researchers triangulated the data collection and analysis for rigor (Creswell, 2007). Furthermore, interviews were conducted in Chinese and the transcripts had to be translated to English for data analysis due to establishing a common language between researchers. For accuracy, the researchers located a bilingual Chinese proofreader to ensure the translated version reflected the original transcriptions. Finally, upon the completion of analysis, the researchers shared the results of data analysis with the interviewed participants as a member check (Lincoln & Guba, 1985) to ensure findings accurately re-interpreted

each participant' perceptions of their learning experiences with MOOCs.

4. Results

4.1. Chinese MOOC Learners' Perceived Experience

4.1.1. Experience of learning with MOOCs: Participants agreed MOOCs embraced a free, self-paced learning style. They acknowledged MOOCs enabled learners to apply their scattered time more effectively, as an interviewed participant, Evans, described.

Evans: MOOCs allow learners to accord with their own pace and make better use of scattered time. I can learn anywhere, anytime, and in any ways that I prefer. For example, I can watch the video lectures before sleep or at dinner. MOOCs are far more flexible than the classroom instruction.

Researchers' field notes also documented learners' learning activities in scattered time due to the flexible and asynchronous learning format. For example, an observed participant, Marie, was a graduate student who pursued her graduate degree in the United States.During the observation, she completed housework while listening to MOOCs' video lectures.

Marie signed into Coursera and chose a registered Chinese course, Classics of Chinese Humanities: Guided Readings by The Chinese University of Hong Kong. L watched the video lecture in Week 3: Landscape of Immortality, but she did not take notes while listening or she even did not have a pen near her. Approximately five minutes later, she left the table and walked to her bed, grabbing her wireless headphone. She wore her wireless headphone and went outside the room with the video playing. She went to the kitchen and started washing the dishes.

These examples demonstrate MOOCs' ability to provided options for Chinese learners to study during their scattered time, but raised a concern about whether MOOC learners engendered deep learning as they learn during their scattered time. Most participants confirmed they could focused on learning materials because of internal interest in the content that motivated them to register for the course.

Tommy: Yeah, we met with a lot of distractors, but in my opinion I registered for this course from my interests or personal needs. I do drop in and out of the course, but when I open the page the content still can engage me in the course. I felt no burden while learning with my interests and it is a kind of enjoyment for me.

Due to the self-paced learning style, MOOC learners can review course materials at their leisure. Participants also often skipped videos because they assumed they had acquired what was addressed. None of participants in either interviews or observations kept notes while learning in MOOCs. However, online posts from MOOC Academy indicated numerous Chinese MOOC learners took notes and shared notes in MOOC Academy, which initiated further discussion or collaboration about the course on the forum. Along with course notes, members shared personal reflections and provided constructive recommendations for incoming registrants in the community.

When asked whether they preferred the pedagogy of MOOC to traditional classroom instruction, all participants were inclined to favor traditional instruction because they preferred face-to-face interaction with teachers in a traditional classroom. The majority of participants admitted that they were not highly involved in the discussion forum in MOOCs,

but actively contributed to the growth of collective knowledge in MOOC Academy and QQ Groups. Participants only posted their thoughts in MOOC discussions as assignments to earn the designated points. In contrast, they had more appearance in MOOC Academy where participants could talk in Chinese rather than English. This might infer Chinese learners would be more active and engaged in interactions where the language used is Chinese. In addition, MOOC instructors might adopt pertinent measures to spur Chinese learners' involvement within a MOOC. An interviewed participant, Crystal, recommended MOOC instructors to group learners by personal interests so that each learner could find classmates who had common interests and would be more actively involved in the course interactions.

Crystal: I was not interested in posting my thoughts on the discussion board of MOOCs. Yeah, I prefer the discussion in MOOC Academy. I do not know why, maybe because of the language, but I can tell that I felt comfortable in MOOC Academy discussion.

I do hope instructors will innovate new ways to assist students' collaboration. The instructor can group students based on our interests. With common interests, we are more likely to collaborate for a project.

Additionally, Coursera was chosen as the most popular MOOC provider among participants. Online posts from MOOC Academy also confirmed Coursera as the leading provider among Chinese learners with the exception of a few recommended courses residing on other platforms. Besides a large array of course options in Coursera, most participants preferred Coursera because they encountered more co-learners from MOOC Academy. In this way, the cohort would be supportive to provide instant help whenever those participants needed. Participants

registered for radically different subject matters for their MOOCs, but computer science and finance were apparently two popular topics. Actually, those two subjects can significantly assist in landing a well-paid job in China.

4.1.2. Problems of learning with MOOCs:

Participants complained language barriers and unfamiliar accents increased the difficulty of courses. An interviewed participant, Yolanda, "dropped the course because I couldn't understand the weird accents." Previously, the network firewall in China was the researchers' largest concern for learners to watch the video lectures, but most MOOC providers such as Coursera and Edx published embedded videos and enabled Chinese learners to watch with little concern of the availability of video lectures. MOOC Academy also contained guides about how to watch Youtube episodes through apps/software on various devices so the network firewall was not a significant obstacle for Chinese learners. However, the disparity in the Internet access and the quality of the wireless connections might result in further challenges for Chinese learners. For example, Cherry complained "the poor quality of wireless connections on the campus requires great patience to stream video lectures."

Interviews revealed participants who were attending college or high school at the time of interviewing perceived MOOCs as a supplement to classroom instruction and external support for personal interests. Normally, Chinese learners completed their coursework prior to turning their attention to any enrolled MOOCs. Therefore, the heavy workload from traditional schooling and promotional exams lessened learners' available time for MOOC (as Tommy replied) and further reduced their passions.

Researcher: What problems did you meet in learning through MOOCs?

Tommy: The time issue. I am a junior year student and the workload from the college courses conquers most of my free time. Besides, I hope to go abroad to continue my graduate studies, so I have to attend extra-curricular classes for GRE and TOEFL such as New Oriental. Time is quite limited for my MOOCs, so I dropped out of them midway.

Another dilemma for Chinese MOOC learners was a lack of prerequisite knowledge foundation because they enrolled in courses for interest or entertainment. Cherry registered for courses that she knew nothing about simply because of a catchy title. Nevertheless, the increasing difficulty from a lack of pre-requisite knowledge later eliminated her interest in completing the course.

Cherry: Sometimes I just skimmed over the course lists or checked out the recommended courses in MOOC Academy. Even though I did not know about the subject, I still registered for that course if I saw a topic that was related to my interests.

Researcher: Did you complete this kind of course that was based totally on your interest, or more accurately, instant interest?

Cherry: No, never. I did not know about the course and met a lot of terminology I cannot understand in the beginning and gradually lost my interest.

4.1.3. Reflections of learning with MOOCs:

Belanger and Thornton (2013) indicated four primary purposes for registering for a MOOC: (1) for lifelong learning, (2) for entertainment, social and intellectual stimulation, (3) for convenient access to educational resources, and (4) for an experience exploring online education. Interviewed participants likewise identified various purposes for enrolling in MOOCs of which entertainment and lifelong learning were most frequently mentioned.

Furthermore, Cherry and Martin demonstrated a gradual transition from entertainment to the broader goal of lifelong learning.

Martin: At the beginning, it was just for interest. Once started learning, I was motivated by the desire for knowledge. Then, MOOCs provided me convenient access to those resources I need but at last, I believe it is a pursuit of lifelong learning engaged me. It is a gradual transition, but MOOCs help confirm my desire for the lifelong learning.

Persistence and self-regulation were emphasized by participants as two important qualities for a MOOC learner. MOOCs supported self-paced learning, but forced learners to individually plan coursework. Larry recommended "avoiding registering for too many courses at the same time so as to stay concentrated on relatively fewer courses." Participants also attributed student-teacher interactions and teaching styles of teachers as great influential factors of their completion of online courses. Crystal mentioned her favorite MOOC teacher below, which inferred a satisfying student-teacher interaction reciprocally helped sustain a relatively higher course retention rate. Additionally, online posts from MOOC Academy confirmed learners' emphasis on the teaching style and student-teacher interaction. Several collected posts complained of low frequency of instructor's online presence. Things such as failing to receive timely feedback and late/no reply to students' emails potentially resulted in students' dropping-out if no measures were taken.

Researcher: Can you talk more about the course you enjoyed most?

Crystal: Before took his class, I always thought that the history study is just remembering a lot of names, places, events, which kills me. However, he asks us

to imagine you are the one who is living in the specific period of the history and then rethinks which choice you would make. I hope professor Lv can give more courses in the future. Professor Lv shared jokes and brought laughter to students when he was teaching, and he provide scaffolding for students to build their own learning structure. Moreover, professor Lv answered students' questions in the discussion forum weekly. He also opened a blog at Sina to interact with students. This frequent interaction between students and teacher made students feel they were closely working with teachers and also helped them build a real class experience.

4.2. Chinese Leaners' Perceptions of MOOCs

4.2.1. Educational innovation: MOOCs demonstrate the potentials of innovation in open access, free cost, and learner-centered philosophy (McAuley, et al., 2010). Participants generally agreed that MOOCs were an innovative phase in the development of online education. MOOCs deliver open educational resources from prestigious programs to learners at no cost. Participants described MOOCs as "a new supplement to traditional pedagogy," (quoted from Crystal) "a new stage of OER in contemporary education," (quoted from Marie) and "a direct access to well-known professors that I have never imagined" (quoted from Tommy). This free, self-paced learning enabled learners to dominate their own learning schedule and action plans. Whenever MOOC learners were distracted from learning, they could pause for a rest and then continue with the course whenever ready.

Compared to traditional open video courses, MOOCs felt "more like a real-life course" (quoted from Evans) and provided learners with a comprehensive online course, especially course interactions and assessment.

Learners encountered innovative forms of assignments and tests in MOOCs and they completed those assessments without burden or boredom. For example, Marie was impressed by an assignment of constructing a shoe tower in a MOOC about creativity. In the exercise, she really enjoyed exerting her creativity with different methods to build a high tower with fewer shoes.

Marie: I stacked up all my shoes. It was easy for me to build a high tower because I have a lot of shoes. However, the assignment hoped us to build a high and stable tower with fewer shoes. It was challenging, but I tried multiple times to get a higher score for my tower.

I believe my creativity was enhanced in this exercise. I like the shoe tower assignments. I shared the photo of show tower on MOOC Academy and also saw classmates' artifact. Some of them are really creative. They did a great job.

Besides the creative assessment, instructors and designers also embedded elaborated design or emerging technologies into the course. In turn, the integration of those design and technologies significantly increased the engagement of the course and motivated learners to persist in the course. For example, Yolanda was highly engaged in a Calculus course because the instructor created animations to illustrate the intricate mathematical concepts and formulas.

Yolanda: I think the integration of special effects or techniques can make the course more engaging. I have ever registered a Calculus course in Coursera. The instructor uses PowerPoint-based animations in the course to explain the mathematical concepts and formulas. The design is really lovely and engaging. Although I have learnt Calculus, I still want to watch the video lectures again even just for those lovely animations.

4.2.2. Endeavors of resolving educational inequality: MOOCs hopefully can address educational inequalities and decrease education costs in China. The responses of the participants were pessimistic regarding the role of MOOCs as to significantly resolve the educational inequality in the existing Chinese educational system. As Larry indicated, MOOCs were still a new concept for most Chinese students who had never registered or completed a course. MOOCs failed to truly reach out to an unprecedented large audience though they intended to extend prominent resources from well-known academic institutions to those who previously lacked the access. For most participants, MOOCs were more inclined as a new format for online courses. In particular, participants' interviews indicated MOOCs were not equally known to people in different parts of China. Tommy was from a small town where the average economic situation for each family was below average. He said none of his friends in the hometown actually knew about MOOCs and never registered for MOOCs. Martin explained the promotion of MOOCs was not likely to occur instantly, but required more efforts to increase the awareness of MOOCs in those remote, poor areas.

Martin: For the adoption, increasing the awareness of MOOCs is absolutely important, but we have to realize it is impossible for the individual efforts or the efforts of a school or a company to make MOOCs well-known to a larger population, especially in those remote areas. It takes time and requires extensive interdisciplinary efforts from the government, the society, and learners. The government invests in the improvement of local infrastructure. The society distributes the sense of value that knowledge is one of the primary personal values. Then learners can possible gradually know about MOOCs and

register their desired courses. Essentially, the local economic development primarily affects the educational equality.

Furthermore, MOOCs were also internally problematic according to participants. Participants complained several MOOC instructors failed to meet learners' demands in teacher-student interaction. Martin indicated his inclination to traditional classroom instruction rather than online curriculum because of more face-to-face collaboration with teachers. So far, Martin's condition represented most of the participants' preference for teacher-centered instruction, within which the instructor's role disagreed with the one (content provider and instruction facilitator) favored by MOOCs. Participants preferred learning without pressures from exam-based assessment, but they also expressed their concerns about having no recognized accreditations for courses they completed. Confused by the return on investment, participants tended to work on MOOCs after accomplishing academic tasks from college courses and promotional exams. Generally, participants considered MOOCs more as supplemental resources for classroom instruction than as an efficient tool that can truly extend the remarkable educational resources to a larger population. Participants widely agreed that more collaborative efforts from the society, institutions, and government to accredit the MOOC certificate was needed. Larry mentioned the accreditation of MOOCs was valid in his high school as the recognition of their completion in optional courses. This was an innovative attempt in high school, but participants, like Martin, mentioned that this required more rigorous endeavors from the society and government to make this happen.

4.2.3. Future efforts in the adoption of MOOCs:
Though MOOCs cannot address the problematic issues of educational inequality for now, participants were enthusiastic about integrating MOOCs into traditional classroom curricula. Previous research indicated a potential for combining MOOCs and flipped classrooms in the practice of higher education (de la Croix & Egerstedt, 2014; Martin, 2012), which was also proposed by Marie and in several online posts.

Marie: I think MOOCs can be used as an additional teaching resource for schools. For example, teachers can use the lecture video of MOOCs as instructional materials for flipped classrooms.

Meanwhile, MOOCs also required continued efforts in sustainable innovation and improvement. According to Yolanda, current MOOC curricula were not systemically structured, which explained why learners failed in solving practical problems after completing several courses. Participants recommended that MOOC providers devote time to creating a more systemic and structured curriculum. Martin further suggested that MOOC providers offer more options of course clusters intended for a specialized topic or a contemporary issue, like John Hopkins University's "Data Science" series. Upon the completion of this structured cluster of courses, learners can acquire the basic literacy in this subject, and hopefully, meet the requirement for a professional position. The learning outcomes for MOOC students become more pragmatic. Tommy mentioned his inclination to the "Small Private Online Courses" (SPOC) model.

Tommy: Yup. I prefer the SPOC model from Harvard and it targeted on specific topics. Everyone can subscribe to selected courses and then gain basic literacy in a topic. That's quite helpful and practical.

On the other hand, participants recommend Chinese learners should adapt themselves to take the challenges to make

full use of MOOCs. Evans indicated the "free style of evaluation may pose a higher requirement for students to self-motivate" and learners should foster the self-regulation and persistence to be ready for the flourishing wave of online education."

5. Discussion

5.1. Implications for Chinese education

The explorative inquiry reveals Chinese MOOC learners perceive MOOCs as a supplemental tool for traditional school learning rather than a panacea that resolves the educational inequality in the current Chinese educational system. MOOCs have appeared as an emerging innovation with the potentials of extending prominent educational resources to a larger population. The sizable change that MOOCs bring to the existing education system cannot be denied, but the idea that MOOCs can actually remove the educational inequality remains far flung. The promotion of MOOCs cannot be accomplished with an individual effort in a short period. Increasing awareness of MOOCs requires more interdisciplinary efforts from the society, government, university, commercial company, and learners. In addition, Rohs and Ganz (2015) further argues MOOCs are likely to enlarge the inequality among students, educators, institutions, and even across the globe due to the unequal access to MOOCs. In this research, participants revealed MOOCs were not ubiquitously known to all students in China, and those who lived in the remote and poor regions had never registered or even been informed of MOOCs. In fact, those remote and poor regions required more efforts in widening the access to higher education and improving the educational equality. Participants also complained about the language barrier when they registered for MOOCs in foreign languages, and further shared the difficulty

in understanding lectures that forced them to drop the course. Due to the regional gap, students in the remote, poor areas tend to have limited opportunities of learning foreign languages. The relatively lower level of literacy in foreign languages probably restricts their learning experience in MOOCs. Even for MOOCs delivered in Chinese, students might encounter the problem of video streaming in certain areas with poor access to the Internet. It can be inferred that MOOCs are not accessible to anyone, but those who possess basic infrastructure can obtain the required literacy. Similarly, the knowledge gap theory argued people's access, usage, and perceptions of emerging technology significant varied due to the imbalanced economical level (Tichenor, Donohue, & Olien, 1970). Therefore, instead of bridging the gap in educational equality, the research identifies the demand of more empirical efforts in investigating whether MOOCs enlarge the educational inequality.

MOOCs alone are not equipped with the required force to address current issues in Chinese education such as inequality (Song & Burgard, 2011) and educational costs (Chen, 2013). However, this does not outweigh the hope of MOOCs to further extend the innovative trend in Chinese education. Chinese learners now can register for courses from prominent schools based upon their interests and accomplish the intellectual exchange in a learner-centered environment (McAuley et al., 2010). The free-style and self-paced learning in MOOCs empowers Chinese learners with more autonomy to efficiently arrange their scattered time for knowledge acquisition. Further, Chinese traditional culture highlights a lean to the masculinism, wherein students are expected to accomplish a high grade in exams for a better social status (Cai et al., 2008; Zhang, 2007). Conversely, Chinese learners can exert MOOCs as a reliable resource to support their interest-driven learning without

any burden from course grades. MOOCs enjoy a promising potential future in China. It is highly recommended to integrate MOOCs into traditional schooling with other emerging technologies or pedagogical innovations such as flipped classrooms and as a supplement to classroom curricula. In addition, participants' inclination to sustain the lifelong learning provides an alternative perspective of integrating MOOCs in China (Yao, 2009).

5.2. Implications for International Education

This research investigated Chinese learners' perceptions of MOOCs, but the implications were also inspiring for the adoption and diffusion of MOOCs across the globe. Currently, educational inequality is a worldwide issue in education (Barman, 2011; Cooray & Potrafke, 2011; Troyna, 2011). The findings indicate MOOCs are not the panacea to the educational inequality in China or probably all over the world, but participants' responses also confirm MOOCs are still promising to lead an innovative trend of lifelong learning and interest-driven learning. Further, MOOCs are reliable supplemental resources that provide pedagogical support for the traditional instruction.

Chinese government and educational market have devoted to exploring the best ways of integrating MOOCs in China. From the research, the top priority in the adoption of MOOCs is to increase the overall awareness of MOOCs. For any government in the world, including Chinese government, this requires more upfront efforts in the improvement of educational infrastructures besides the enormous investment in MOOCs. For example, each government is expected to ensure people in different places have equal Internet access and connection quality so that people can equally share the benefits of MOOCs.

Another issue emerging from the research is the accreditation of MOOC certificate. The majority of Chinese leaners prioritize their academic tasks for college courses because a college degree is more likely to assist them in job hunting. Whether the MOOC certificate can be accredited could significantly influence the adoption and diffusion of MOOCs. For worldwide advocates of MOOCs, the accreditation of MOOC certificates deserves more of their elaborations. Besides, Chinese MOOC learners exhibit more interests in subjects beneficial for landing a well-paid job, but current MOOC curricula are relatively discrete to prepare learners for future careers. In general, a more systemically and pragmatically structured curriculum, such as Data Science from John Hopkins University, is highly recommended for the delivery of MOOCs in the next developmental phase.

5.3. Limitations of the Study

The qualitative research revealed Chinese learners' perceptions of MOOCs, but the research design required further improvement. For example, the qualitative data was more intended to generate an in-depth meaning of participants' experience (Creswell, 2007), but to understand an overall understanding of Chinese learners' perceptions future research might combine quantitative data with qualitative inquiry to represent a more comprehensive image of Chinese MOOC learners. Besides, narrative inquiry method is significantly restricted by its temporality (Schram, 2006), which means the findings could reveal Chinese MOOC learners' perceptions during the time of data collection. The demand for follow-up investigations on Chinese learners' updated perceptions of MOOCsemerges from the limitations of this research. Finally, this research mainly examined MOOCs from the perspective of higher educationand did not

tap into the adoption of MOOCs in K-12 education.Currently, more high schools in China are involved in the hype of MOOCs (Zhang, 2015) and future research might more rigorously investigate how MOOCs can impact Chinese K-12 education, especially the issue of equality/inequality in K-12 education.

6. Conclusion

Assuming the hope of universal education, MOOCs extend high-quality educational resources from prominent institutions to a wider audience who otherwise would not have access. Being integrated in China, MOOCs can potentially help address current issues of inequality (Song & Burgard, 2011) and increased costs (Chen, 2013) in Chinese education by means of its open access and free cost for massive learners (Huang, et al., 2014; Jacoby, 2014; McAuley, et al., 2010). However, at this moment, MOOCs alone are not likely to resolve such problems in Chinese education. More interdisciplinary efforts from the society, government, university, and learners are needed to accomplish equality in Chinese education. Fortunately, both Chinese government and the educational market embrace a positive vision for the future of MOOCs in China (Huang et al., 2014). With continued efforts, the Chinese government and educational market are actively seeking input for more efficient and effective ways of adopting MOOCs as an alternative to improve education (Wang, 2014). In the future, MOOCs are promising to be widely adopted for K-12 education and lifelong learning besides higher education in China.

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