MOOC APPROPRIATION AND AGENCY IN FACE-TO-FACE LEARNING COMMUNITIES

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ABSTRACT

Aim/Purpose	The emergence of massive open online courses (MOOCs) has fostered the creation of co-located learning communities; however, there is limited research on the types of interactions unfolding in these spaces.
Background	This study explores Peer 2 Peer University's Learning Circles, a project that allows individuals to take MOOCs together at the library. I investigated the patterns that emerged from the interactions between facilitators, learners, course materials, and digital media in the pilot round of these Learning Circles.
Methodology	This study employs an ethnography of hybrid spaces (online/offline participant observations, in-depth interviews, and artifact collection) of face-to-face study groups taking place at library branches in a Midwest metropolitan area. Data analysis employs the constant comparison method.
Contribution	Interactions taking place in the Learning Circles increased individuals' agency as learners and subverted the MOOC model through processes of technological appropriation.
Findings	The findings reveal that interactions within Learning Circles created a dynamic negotiation of roles, produced tension points, enabled a distributed model of knowledge, and structured study routines. The pilot round of Learning Circles attracted diverse participants beyond the typical digitally literate MOOC student. Many of them had no previous experience taking online courses and, in some cases, no Internet connection at home. This paper argues that Learning Circles favored the appropriation of artifacts (technologies) and increased participants' agency as learners in the Internet age.
Recommendations for Practitioners	Practitioners can use the Learning Circles model to benefit disenfranchised individuals by providing them with access to materials resources and a network of peers that can help increase their agency as learners.
Recommendations for Researchers	This study suggests that it is fundamental to pay attention to learning initiatives that are unfolding outside the scope of traditional and formal education.

Impact on Society	Open educational resources and public libraries are opening new pathways for learning beyond traditional higher education institutions.
Future Research	Future research can explore how the learning circles are adapted in cultural contexts outside the United States.
Keywords	massive open online course (MOOC), e-learning, face-to-face, technological appropriation, agency, digital literacy, Peer 2 Peer University

INTRODUCTION

The expression *massive open online course* (MOOC) has been used to describe large-scale educational formats that range from centralized platforms to decentralized networks of blogs/social media feed (Anders, 2015). Massive online courses have proliferated in the last ten years despite academics' negative critiques (Fyfe, 2016; Jaschik, 2013; Nakamura et al., 2014). By the end of 2018, 900 universities around the world had announced or launched 11,400 MOOCs in several languages (Shah, 2018). These numbers suggest that this educational approach might not go away very soon. In a systematic review of academic research on MOOCs, Lambert (2020) highlights that educators, learners, and organizations have been exploring different models to maximize learning outcomes.

Face-to-face communities of learners emerged as an alternative to mitigate some issues with the MOOC model, such as low completion rates and the lack of a cohesive learning community (Corbeil et al., 2019). For example, completion rates as low as 5-7% stood out as a central shortcoming of this educational format (Azevedo & Marques, 2017; Jordan, 2014). Further, research highlighted that large-scale courses hindered the formation of learning communities (Gillani & Eynon, 2014; Gillani et al., 2014; Knox, 2014; Liyanagunawardena et al., 2013). Scholars also pointed out that the idea that MOOCs offer free self-guided education to all adults overestimates people's ability to learn by themselves and disregards power differences (Knox, 2013; Santos, 2008). Taken together, these challenges prompted many individuals and organizations to try to improve MOOCs.

In 2015, the non-profit organization Peer 2 Peer University (P2PU) and an American public library launched the first pilot round of Learning Circles. Learning Circles are free face-to-face study groups for people who want to take MOOCs or other types of free courses together. A facilitator keeps conversations about the lessons flowing and helps with the technical aspects of the online courses, such as enrollment and log in. This person does not need to be a content expert and, usually, librarians take this role. The library offers meeting spaces, computers, and internet connection so students can access their courses through the MOOC platforms. P2PU trained facilitators so they could moderate conversations. The non-profit organization helped with the logistical aspects of launching a new project, such as providing a learning management system. Figure 1 shows the many components that comprise Learning Circles. Given the structure that the library and P2PU gave to the students, Learning Circles were particularly beneficial for individuals with no internet connection at home or who had little experience with online learning. P2PU's website highlights that they strive to create embodied social spaces that support adult learners and prevent dropouts (Peer 2 Peer University [P2PU], n.d.-b). Since their creation, Learning Circles have expanded to other cities located in North America, South America, Europe, Africa, Asia, and the Middle East (P2PU, 2018).

Despite the project's expansion and the proliferation of other similar initiatives, there is little research on face-to-face study groups for MOOCs, which hinders scholars' ability to understand the kinds of interactions unfolding in these spaces. To address this gap, this study seeks to answer the question of what types of patterns emerge when facilitators, learners, course materials, and digital media interact in the Learning Circles. This paper uses social science theories to focus on the learning environment aspects of MOOCs, which is particularly useful for disciplines that study interactions in educational

settings, such as communication. The field of academics researching MOOCs can vary, but it typically falls within the broader fields of education, social sciences, and computer science. Thus, the objective of this paper is to contribute to the body of multidisciplinary research on MOOCs.
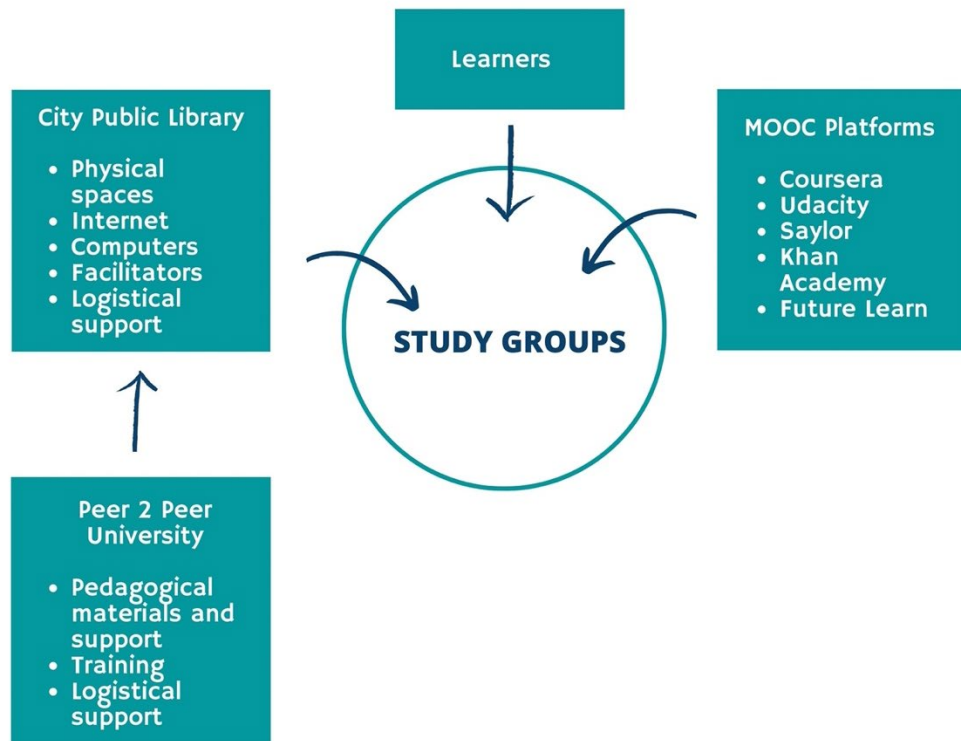

Figure 1. Organizations and individuals involved with the pilot round of Learning Circles

In the following sections, this paper defines humans and artifacts as being co-constituted. Then, it describes the empirical research on face-to-face MOOC groups. Next, it explains the ethnography carried out in this study and brings details about how Learning Circles operate. Finally, the results reveal that interactions within Learning Circles created a dynamic negotiation of roles, produced tension points, enabled a distributed model of knowledge, and structured study routines. Thus, I argue that these face-to-face study groups favored the appropriation of artifacts (technologies) and increased participants' agency as learners in the Internet age.

HUMAN-ARTIFACT INTERACTIONS

This study explores face-to-face learning communities, and it considers the roles of both humans and artifacts in educational environments. For this reason, it uses a theoretical perspective that views the social and material dimensions of human life as related and inseparable (Barney, 2004; Fischer, 1994; Latour, 1992, 2005; Slack & Wise, 2005). Artifacts are the technologies that humans develop, including the mundane objects of our societies, such as clothes, books, and computers (Fischer, 1994). Individuals create tools that later can constrain and shape the actions of other humans (Latour, 1992). According to Barney (2004), four aspects comprise the role of artifacts in a society: (1) affordances *(essence)*; (2) technical aspects that embody creators' choices *(design)*; (3) the context of their use *(situations)*; and (4) the ways people employ them *(use)*.

This approach does not propose an equivalent understanding of human and non-human agents because it considers the role of intentionality (Latour, 2005). As a consequence, individuals can choose to *appropriate* artifacts. Dourish (2003) stresses that appropriation involves the reconfiguration of a

technology to suit specific needs or to adapt it for purposes beyond the original design. This process lies in the intersection of technological affordances and social practices (Dourish, 2003). More importantly, appropriation redefines who can use a particular technology, under what conditions, and for what purposes (Bar et al., 2016).

This framework dismantles the dichotomy between humans and artifacts and has implications for the notion of agency, or the capacity to act in the world while engaging with material reality (Bennett, 2005). From this standpoint, mastering a new skill depends not only on individual will but also on interactions with other people, tools, and lessons. Consequently, agency is always a networked capacity. This distributed view opens the possibility for non-human actors to exert agency. In summary, this theoretical perspective views humans and artifacts as co-constituted, and it assumes that both shape educational environments. The next section reviews the literature on co-located communities for MOOC learners.

INTERACTIONS IN MOOC CO-LOCATED COMMUNITIES

There are MOOCs with different structures that individuals in co-located learning communities can use. The literature highlights two types of courses known as connectivist MOOC and extended MOOC, or cMOOc and xMOOC, respectively (Rodriguez, 2013; Yuan & Powell, 2013). cMOOC, the oldest approach, uses materials that communities of learners create and curate in a decentralized fashion. They favor self-guided learning and emphasize collaboration between participants (Anders, 2015; Downes, 2012; Milligan et al., 2013). Kop (2011) stresses that individuals need to be autonomous and digitally literate to thrive in these courses. xMOOCs offer videos and materials that have well-defined learning objectives, assessment methods, and simulate traditional classrooms (Rodriguez, 2013; Yuan & Powell, 2013). This model offers low flexibility and has received many criticisms from academics who averred that the massification of lessons does not take into account the needs of local communities (Fyfe, 2016; Jaschik, 2013; Santos, 2008). Others also challenged the notion that xMOOCs are open because they usually have copyright licenses that do not allow content to be repurposed (Atenas & Havemann, 2013; Rodriguez, 2013).

More recently, researchers started to highlight hybrid MOOCs that try to balance the strengths and weaknesses of the previous models (Anders, 2015; Beaven et al., 2014). An emerging alternative is to supplement xMOOCs with co-located learning communities (Chen & Chen, 2015; Chingos et al., 2014; Damasceno, 2018; Norberg et al., 2015). For instance, learners have been informally organizing their own study groups outside higher education institutions. Bulger and colleagues (2015) analyzed 4,000 MOOC-related events on the *meetup.com* website, a networking platform for coordinating in-person meetings. Their study concluded that learners around the world engaged with co-located communities primarily to discuss content-related matters (Bulger et al., 2015). Chen and Chen (2015) conducted an interpretive case study of individuals who met face-to-face in Taiwan for six weeks to help each other learn the content of an xMOOC. Their results highlighted cognitive, affective, and accountability gains for participants. Learners broadened their intercultural awareness and shared learning strategies, created a strong sense of community, and became more inclined to try other courses and functions within the MOOC. Along the same lines, Damasceno (2018) found that affective bonds within face-to-face MOOC study groups created cohesion and strengthened accountability between peer learners.

Universities have also been using this approach in blended or wrapped experiences where students cover online content individually and receive support from peers and instructors through face-to-face classroom interactions. The University System of Maryland (USA) conducted the most extensive experiment with this model that involved 17 courses across seven universities (Chingos et al., 2014). The study analyzed seven side-by-side sections from multiple disciplines and revealed that students in the wrapped groups performed slightly better than those in regular courses. Results also pointed out the challenges of adapting the MOOC content to university courses, as the massive courses were not designed to match the number of weeks of a college semester.

Cornelius et al. (2019) also examined the experiences of on-campus learners taking a blended MOOC course and compared their engagement levels with those of a wider cohort of on-campus learners. They found that learners in the blended course were more engaged than on-campus learners on aspects related to social learning. In another study, Zhao and Song (2020) provided resources, interaction, strategy, and evaluation support for students taking blended courses in a Chinese university. The results showed that the support initiative promoted learning autonomy, improved learning strategy, and increased interactions. However, students also wanted more targeted support and preferred face-to-face instruction over online learning.

Three Nordic countries also ran an experiment that involved in-person study groups for MOOC learners. In the pilot round, a Swedish learning center hosted weekly face-to-face meetings for individuals seeking professional development. In the end, they were able to take a test and receive a certificate from Lund University (Norberg et al., 2015). The researchers argued that these groups leveraged global (xMOOCs), national (universities), and local (learning centers and peers) resources to expand learners' knowledge and worldviews.

This body of research indicates that community-oriented instructional strategies can benefit MOOC learners. However, few studies have investigated in depth the kinds of interactions taking place in these co-located groups. This makes it challenging to understand specifically which types of interactions emerge in these face-to-face meetings. Thus, this study asks: **what types of interaction patterns emerged from the interplay of facilitators, learners, course materials, and digital media within the Learning Circles in their pilot round**?

ETHNOGRAPHY OF HYBRID SPACES

This research employs a qualitative and naturalistic methodology (Hine, 2015; Patton, 1990) to study the interactions among facilitators, learners, course materials, and digital media in the Learning Circles. I conducted an ethnography study because it requires prolonged engagement with participants and allows one to capture in-depth information about a given context (Hine, 2015; Patton, 1990). My participants interacted both face-to-face and through online platforms. In other words, their actions unfolded across *hybrid spaces* (de Souza e Silva, 2006) where virtual and embodied experiences intersected to create their sense of space and place. This aspect called for traditional and innovative methodological approaches that framed digital networks both as field site and instruments for data collection (Hine, 2015; Robinson & Schulz, 2009). For this reason, instead of determining my field site beforehand, I followed my participants' actions through online and offline spaces. Using Latour's (1996) terminology, this study involved *tracing people's actions*.

SETTINGS

The settings for this study were the embodied and virtual spaces directly connected with the interactions in the Learning Circles. They included library branches, xMOOC platforms, video calls, and P2PU's learning management system. Hine (2015) points out that the researcher's role in determining the boundaries of the field site becomes more evident when exploring social phenomena across online and offline realms. My rationale was to include spaces in which groups' and individuals' actions directly impacted the Learning Circle experience. There are details about how Leaning Circles operate in the procedures section below. The following paragraphs focus on the description of this study's settings.

Seven branches of a city public library system in the Midwest of the United States hosted the nine study groups observed for this research. Each one of them was located in neighborhoods with different median household incomes. As this was the first ethnographic exploration ever done of the Learning Circles, it made sense to look at meetings taking place in different parts of the city (see Table 1, which shows the locations of the library branches and the median household income in their neighborhoods).

Table 1. Learning Circle location and median household income

Learning Circle (Course/Platform)	City Area (Library Branch)	Neighborhood - Median Household Income (2013)*
Public Speaking/ Coursera	West	USD 50,300
Public Speaking/ Coursera	South	USD 27,404
HTML & CSS/ Udacity	North	USD 48,991
Academic Writing/ FutureLearn	Downtown	USD 96,426
Writing Fiction/ FutureLearn	South	USD 29,287
Resume Writing and Interview Skills/ Saylor	West	USD 54,423
HTML & CSS/ Udacity	Downtown	USD 96,426
Resume Writing and Interview Skills / Saylor	South	USD 38,949
NCLEX (preparation course for nursing certification test)/ Khan Academy	Downtown	USD 96,426
*Source: city-data.com/		

Participation in the Learning Circles extended beyond the libraries' physical boundaries, so the field site also encompassed six xMOOCs from five different providers. Most of the Learning Circles focused on professional development topics, so they were the ones included in this study. Thus, this research used a *criterion sampling* technique that explores all cases that meet some predetermined rule (Patton, 1990). In particular, the observed groups covered the topics of public speaking, computer coding (HTML and CSS), resume writing and interview skills, and preparation for a nursing certification (NCLEX). There were learning circles dedicated to other topics, such as academic writing and fiction writing, so I attended one session of each to have a sense of how they differed from the ones focused on professional development.

The field settings also included other virtual platforms that supported the existence of Learning Circles. Project coordinators met using a videoconference software, so I attended their meetings as well. In addition, librarians and P2PU staff used a learning management system, so I also looked at the messages exchanged there.

PROCEDURES

P2PU staff and library directors chose the topics for the courses, the time, and the location for the weekly meetings. The library offered study groups focused mainly on professional development topics because they thought that these types of topics would be more appealing to their patrons. P2PU and the library were launching the Learning Circles for the first time, so staff and directors met weekly using videoconference software to discuss the progress of their initiative (see Figure 1, which that describes all components that comprise Learning Circles). The library provided a space for patrons to meet and access to computers and the Internet. A facilitator, usually a librarian, moderated conversations about the MOOC lessons in these groups. They had no expertise on the subject matter and went through a brief in-person training to learn how to moderate conversations in their groups. P2PU offered pedagogical support to the facilitators through meetings and materials that explained how to moderate conversations.

Learning Circles were free and open to any patron of the library, so participants were not required to take any test to join a study group. Individuals interested in participating in a Learning Circle had to

fill out an online registration beforehand. Learners completed the activities in the MOOCs but there were no graded assignments, so they received only a participation certificate from the library at the end of their study groups. Learners and facilitators met weekly for sessions that lasted 90 minutes and used this time to discuss the MOOC materials and help each other understand the lessons. P2PU provided facilitators with outlines to guide each study session that included suggestions for icebreaking activities and discussions for students to reflect on their learning process. For instance, what were the things that were working well in their groups? Which aspects needed changes? Participants had to adapt the MOOCs because some courses were structured to be covered in a timeframe longer or shorter than the six or eight-week format that the library offered. The number of participants per Learning Circle varied from two to ten, including facilitators (see Table 2, which details the meetings dates for each learning circles, the age range of learners, the number of participants, and the numbers of sessions that I attended). Rooms were equipped with chairs, tables, a multimedia system, and a projection screen. Facilitators organized rooms in different ways. Some of them positioned tables in semi-circles, while others had them facing each other or the projection screen.

Table 2. Basic information on Learning Circles

Course/Platform	Meeting Day	Students who attended at least three sessions	Approximate students' age range	Number of sessions that I attended
Public Speaking/ Coursera	Monday	2	40 – 50	6
Public Speaking/ Coursera	Tuesday	3	60 - 70	6
HTML & CSS/ Udacity	Tuesday	4	50 – 80	6
Academic Writing/ FutureLearn	Tuesday	~5	Unknown	1
Writing Fiction/ FutureLearn	Wednesday	~ 3	Unknown	1
Resume Writing/ Saylor	Wednesday	4	40 – 50	6
HTML & CSS/ Udacity	Thursday	6	Unknown	1
Resume Writing/ Saylor	Thursday	3	20 – 40	6*
NCLEX/ Khan Academy	Saturday	3	20s	6
* I attended this learning circle as a learner				

PARTICIPANTS

Participants in this study included six project coordinators (four P2PU staff and two library directors), 13 volunteers who facilitated Learning Circles (librarians and outsourced library staff), and 24 students. P2PU's team worked remotely because they lived in cities in Europe and in North and South America. The library directors and group facilitators were all located in the city where the pilot round took place. Project coordinators and facilitators were included in the study because their input was valuable to understanding the Learning Circles. Also, all students in the professional development courses were part of this research. I recruited these participants for interviews in the learning circles sampled for this study. Facilitators allowed me to explain the project to their groups, and I

passed around a piece of paper asking if they wanted to participate in an interview. Individuals who voluntarily agreed to do so were contacted for a face-to-face conversation.

Fifteen men and twenty-four women were interviewed, including two project coordinators, 13 facilitators, and 24 students. The students' demographic ranged from their early 20s to their mid-80s. Three learners were born outside the United States of America: in France, Iran, and Taiwan. The others were all Americans with four of them being Latino, eight White, and nine Black. Sixteen students did not have previous experience with online learning, and approximately half of them had no Internet connection at home. Thus, they accessed the course using the libraries' computers or through their phones connected to WIFI in places like coffee shops or restaurants.

I collected demographic data to have a description of the types of learners that participated in the Learning Circles. While my data analysis did not involve any demographic breakdown (see further details in the data analysis section), demographic information allowed me to notice that the project contemplated learners that do not normally take MOOCs, like seniors and people with low digital literacy skills.

RESEARCHER'S ROLE

The assumption that a researcher's in-depth involvement with participants can generate a complex understanding of people's actions grounds this ethnographic study (Boellstorff et al., 2012; boyd, 2008; Hine, 2015; Patton, 1990). Thus, I moved to the city where this pilot round of Learning Circles took place and stayed there during the entire duration of the pilot of the Learning Circles. I immersed myself in my participants' environment and interacted with them inside the study groups and outside when we took the same public transportation to navigate the city.

My role varied in each Learning Circle. Some learners wanted to include me in their group forming activities, so I acted as a participant observer. Others preferred to have me observing them, and, in these cases, I just took notes. Also, I enrolled as a learner in a Resume Writing and Interview Skills circle because the study groups were open to all library patrons. Therefore, I covered the MOOC lessons and participated in the weekly face-to-face meetings. Being a student in a Learning Circle gave me first-hand experience and a deeper understanding of the project. I took notes only for myself during these meetings and did not analyze them like other field notes and interviews.

DATA COLLECTION

I used three sources of data for this study. The first source was handwritten field notes of face-to-face interactions in the study groups, weekly calls between P2PU staff and library directors, and virtual conversations in an online learning management system. These notes allowed me to observe the interactions that informed the learning circles. The second source were interviews with learners, facilitators, and project coordinators, which allowed me to understand how participants perceived the interactions in their study groups. The third sources were MOOC lessons and additional learning resources, which gave me an understanding of the types of materials that learners were using. Monitoring P2PU's and the library's online presence via their website, Twitter, and Facebook pages also helped me to see how their project evolved after the pilot round ended. For instance, their project expanded to other cities afterwards, and P2PU made new materials available on their website to help facilitators. Access to all these layers of the project allowed me to follow traces of interactions (Latour, 1996) and understand the role that distinct people and stakeholders played in this open education enterprise.

- **Observations**: In total, I attended 39 Learning Circles sessions, which resulted in approximately 60 hours of participation. I took handwritten notes during each session and then expanded on them right after the meetings were over. I entered the computer descriptive summaries of my handwritten observations in a Word document and used them to code while still referring to my original notes during data analysis.

- **Interviews**: In addition to field observations, data collection involved interviews with learners, facilitators, and two project coordinators. Only individuals over 18 years old participated in these conversations, which took place at coffee shops, libraries, parks, via phone, or video chat. I assigned numbers to each one the audio files to eliminate possible personal identifiers and hired a professional third-party service that transcribed the interviews in 448 single-spaced pages. All the interviews were semi-structured. The questions to learners asked about their experience in the study groups, their opinions about the MOOCs, their study routines, and the technology used to access the course. The questions to facilitators explored their experience running the study groups and their training. Project coordinators were interviewed using big picture prompts about the goals of the project.

- **Artifacts**: For the artifact collection portion of this ethnography, I collected P2PU's pedagogical materials, course lessons from the five MOOC platforms used in this pilot round, and additional learning resources that participants used in the meetings. Finally, I checked updates on P2PU's and the library's websites and social media accounts to monitor how the project evolved.

DATA ANALYSIS

The constant comparison method (Glaser, 1965) guided the analysis on software called QDA Miner Lite. This stage involved identifying patterns and creating categories to address my research question. I built my final coding scheme by comparing the excerpts of data within and across categories until reaching saturation. I followed Glaser's (1965) method, in which he explains that "as the coding continues the constant comparative units change from a comparison of incident with incident to incident with properties of the category which resulted from initial comparison of incidents" (p. 440). The coding process also involved memo-taking that helped to consolidate my findings (Boeije, 2002). In the final stage of data analysis, I selected the categories (Glaser & Strauss, 1967) that focused on patterns common to all the Circles observed in this study.

During the analysis, I was able to compare data from distinct sources and triangulate my information by comparing similarities and differences. Peer debriefing and member checks were also used to increase the trustworthiness of both data collection and analysis (Guba, 1981; Lincoln & Guba, 1985). Peer debriefing included seeking guidance from a senior colleague to manage relationships during the fieldwork, as well as feedback on my coding scheme. Project coordinators were asked to provide feedback on portions of my work that involved how I presented the Learning Circles project. My analysis resulted in four themes described next. Participants' names in this study are pseudonymous.

RESULTS

This study asked what types of interaction patterns emerged from the interplay of facilitators, learners, course materials, and digital media within the Learning Circles in their pilot round. The results, as shown in Table 3, reveal that this interplay created a dynamic negotiation of roles, produced tension points, enabled a distributed model of knowledge, and structured study routines. The following sections describe each one of these themes.

Table 3. Summary of findings

Category	Description
Created a dynamic negotiation of roles	The lack of a centralizing in-person instructor figure in the Learning Circles opened spaces for a dynamic negotiation of roles. Learners and facilitators went back and forth when deciding who oversaw content-related issues, group logistics, and conversation flows.
Produced tension points	The technological and human resources that comprise learning circles created a project with several layers and tension points, such as the asynchronous design of the MOOC versus the synchronous nature of the meetings and the massive character of the courses vs. the local context of the study groups.
Enabled a distributed model of knowledge	Learning Circles participants used several knowledge points in their learning experience, such as (1) MOOC material, (2) P2PU's group forming and reflection activities, (3) learners and facilitators, and (4) additional learning resources.
Structured study routines	P2PU's model and MOOC affordances helped to structure the study routines of participants by providing (1) a dedicated time and space for studying, (2) an accountability network, and (3) a pre-established/semi-structured lesson plan.

CREATED A DYNAMIC NEGOTIATION OF ROLES

Learners and facilitators went back and forth when deciding who was in charge of *content-related issues*, *group logistics*, and *conversation flows*. Thus, they performed several roles: (1) peer instructors; (2) group coordinators; (3) co-learners; and (4) motivational figures.

Participants who acted as instructors clarified doubts, taught new concepts to other people, summarized MOOC lessons, and asked questions to assess comprehension. For instance, in the NCLEX Circle, I saw participants explaining new ideas to their peers. These types of interactions also involved clarifications about how to use technologies. In the Resume Writing Circle, the facilitator taught a student how to sign-up for the MOOC. Individuals in the role of instructors also summarized lessons, like a facilitator who would always write down on the whiteboard the main ideas from Coursera's public speaking lectures.

Group coordinators dealt with logistics and decided which lessons and activities to cover, brought printed materials to the groups, and provided digital tools, such as cameras or new types of software. Facilitators were in charge of giving material resources to the learners and were the ones informing new participants of how the groups worked. Learners and facilitators took turns in deciding which lessons to cover. For instance, in one of the Public Speaking Circles, learners asked facilitators which topics they should study at home, and, after some weeks, they started to choose by themselves.

P2PU staff encouraged the librarians to put learners in charge of their groups. To comply with this, many asked students to manage technology. Notably, individuals who acted as group coordinators would generally be the ones handling the shared digital tools during the meetings and navigating the MOOC while others followed along through the projection screen. As a consequence, these individuals had to communicate with peers and negotiate which lessons they should cover and ask for feedback. On the other hand, the groups in which facilitators did not offer these opportunities displayed

fewer interactions among participants. In these cases, learners could have chosen to shape their study groups more actively, but they followed the facilitators' lead.

Co-learners shared resources, gave feedback to their peers, explained their learning strategies, posed questions, and offered their opinions. Unlike peer-instructors who taught a concept to their colleagues, co-learners taught problems alongside each other. For example, along-side-each-other interactions occurred when participants took quizzes together, delivered speeches, and helped to solve content-related issues.

Participants also acted like motivational figures that kept others engaged with positive statements and reframed challenging situations. Facilitators took the lead in enacting this role most of the time even though students also expressed their support on several occasions. For instance, in the Intro to HTML & CSS Circle, two facilitators encouraged participants to go beyond the MOOC to find answers. In the NCLEX Circle, a facilitator continually helped students to keep a positive attitude in the face of failures. In one of the Public Speaking groups, a student felt overwhelmed, and the facilitator replied, "We are here, we will support you." In summary, this model required participants to be flexible, collaborate, and support each other. Students felt more compelled to talk to each other when a peer (instead of the facilitators) was in charge of shared digital tools.

PRODUCED TENSION POINTS

Learning Circles assembled technological and human resources under a single initiative, and this combination created a project with several layers. Tension points included the asynchronous design of the MOOC versus synchronous nature of the meetings and the massive character of the courses vs. local context of the study groups.

Massive open online courses targeted online audiences and prioritized asynchronous forms of communication. All the platforms that P2PU and the city public library used emphasized self-paced learning. For instance, Udacity invited users to "develop job-ready digital skills—for as few as 10 hours per week, at your own pace, when and where it's convenient for you." (Udacity, n.d.). Within the groups, this flexibility created a problem when students covered materials at different paces. For instance, Oakley, a group facilitator, noted that students used laptops to watch course videos in their first session. She believed this was the reason why they did not attend subsequent meetings: "It felt kind of pointless. Like, they could be at home, in pajamas in their bed, and that's probably what they all decided because they didn't come back."

Spatial display and types of digital technologies available influenced interactions between participants. To create more cohesion within the groups, all facilitators ended up using a projector so students could watch videos and take quizzes together; however, they kept using individual machines for the courses with many readings, such as the Resume Writing and Interview Skills. In this group, interactions between learners were less vibrant.

Outside the Learning Circles, participants also covered materials at different paces and, for this reason, many of them had to watch some videos more than once. In these cases, they had to be flexible to accommodate their peers' needs. Magdalena, for instance, noted she re-watched videos because her colleague worked at a slower pace at home. Nevertheless, she benefited from her group's feedback and interactions.

In addition to online and offline tensions, the massive character of the MOOC did not always fit the local context of Learning Circles. For instance, the Resume Writing and Interview Skills course focused on college graduates, but most participants were adults with previous work experience. Besides, NCLEX students did not always understand why some quiz alternatives were considered right, while HTML & CSS participants believed that the MOOC instructors skipped steps in their explanations, which caused them to struggle to follow the lessons. In the Public Speaking course, the instructor used several examples that did not relate to students' backgrounds. For example, after listening to

a series of videos talking about MOOCs, a participant asked: "What is a MOOC again?" This example shows that the student was taking a MOOC without having a full understanding of what it was. Additionally, facilitators often felt that P2PU's activities did not always relate to their group dynamics and wished P2PU gave them more options for group activities.

Overall, students approached learning materials critically and reflectively. For instance, a learner from a Public Speaking Circle thought that coordinators should understand the local reality of learners: "You need to take into consideration the needs of the community and have these – have it stated. Learning Circles should be tailored with consideration to culturally sensitive communities" (Paula, Public Speaking Circle). Critical reflections, such as Paula's, were observed across all the groups.

ENABLED A DISTRIBUTED MODEL OF KNOWLEDGE

Learning Circles allowed a distributed model of knowledge points that was noticeable because participants referred to them during the weekly meetings and interviews: (1) MOOC material; (2) P2PU's group forming and reflection activities; (3) learners and facilitators; (4) additional learning resources (when participants used them in the groups).

Without the centralized figure of an in-person instructor, learning materials such as videos, readings, activities, quizzes, and the internet became fundamental reference points that learners had to rely on rather than just aids for human-centered interactions. For instance, at the beginning of meetings, facilitators would say: "Today Peer 2 Peer University wants us to..." Likewise, online lessons guided most of each session, as participants watched videos, did the readings, or completed quizzes together. Further, participants adapted these lessons through reliance on additional learning resources, such as websites, online encyclopedias, and videos. For instance, in an HTML and CSS group, students used YouTube videos when they needed to resolve their doubts. Nonetheless, online materials were still a knowledge reference point for these learners.

Many students mentioned P2PU and MOOC instructors in their interviews. Michael, from a Public Speaking Circle, observed that sometimes the professor "talks a little fast and you've got like...it's just natural. But the structure is really good for public speaking. It is like a university professor. He's speaking like he's in a lecture, so I think that's very professional" (Michael, Public Speaking and Intro to HTML & CSS Circles). Like him, others praised or critiqued the video lectures in the massive courses. In many instances, facilitators and peers also helped with content-related issues. Participants were able to explain that the role of the instructor was not central in the Learning Circles. Mario, for instance, contrasted his group with traditional educational settings: "Everybody gives a little feedback or points in the right direction… instead of just having the teacher or the instructor saying: This is what is up. You know?" (Mario, Resume Writing and Interview Skills Circle).

Learners were able to distinguish several knowledge points within their groups; however, some did not understand the relations between the MOOC materials, P2PU's group activities, the library facilitators, and additional learning resources. As Taylor, a Learning Circles facilitator, explained, after several weeks into her Learning Circle experience, she realized that the model was not always clear to students. "A woman [Learning Circles participant] started talking to me and asking me about an online class. She honestly had just decided to sign up for another online class, and she thought, for whatever reason, that I had something to do with that." Unlike this student, others could separate the several layers of the project. Some of them said that they felt encouraged to take free online classes by themselves after they joined a Learning Circle.

Even though Learning Circles provided students with several knowledge points, P2PU's handbook advised facilitators to manage expectations: it is unlikely that a person with no programming experience "will get a programming job after one HTML/CSS Learning Circle. However, they will gain a better understanding of how to build a website, get a sense as to whether this is a subject they'd like to continue in" (P2PU, n.d.-b, p.19). In summary, the Learning Circle model offered a distributed model of knowledge reference points that differed from classrooms. In traditional learning settings,

the instructor usually concentrates and coordinates all these layers. Learners had to adapt to this model throughout the weeks.

STRUCTURED STUDY ROUTINES

Participants who joined the Learning Circles developed a structure to their study routines resulting from the combination of resources of the library system, P2PU's model, and MOOC affordances. Learners reported that they benefited from having a dedicated time and space for studying, a supportive network, and a pre-established/semi-structured lesson plan. Participants trying to take MOOCs faced daily challenges regardless of their age, marital status, or profession, and the library environment gave them the chance to focus their efforts: "I have roommates, so if I want to study at home, I have to work around their schedules which is not always the most fun thing to do. And if they are at home, then I usually have to find somewhere else to study" (Victoria, NCLEX/Registered Nurse Prep Test Circle).

Learning Circles also provided an accountability network for students because the presence of other people helped them to stay on track. "Well, the group helps me because I'm lazy. And people do things in groups because they are lazy." (Amanda, Start Writing Fiction, Beginner's Guide to Writing in English, Intro to HTML & CSS Circles). The presence of peers motivated them to attend meetings and to work outside their Circles.

In several instances, learners and facilitators adapted these resources to fit their goals. For example, sometimes, they covered more than a module per meeting or relied on additional learning materials. However, these artifacts (MOOC and P2PU's recipe cards) prompted students and facilitators to approach each session with at least a semi-structured plan of study.

DISCUSSION

Interactions within the Learning Circles created a dynamic negotiation of roles, produced tension points, enabled a distributed model of knowledge, and structured study routines. P2PU's initiative accomplished more than just adding an embodied dimension to MOOCs, as it helped participants organize their schedules, navigate contexts across *hybrid spaces* (de Souza e Silva, 2006), and collaborate with peers. Thus, I argue that these face-to-face study groups favored the appropriation of learning artifacts (technologies) and increased participants' agency as learners in the Internet age.

The interactions occurring in these Learning Circles illustrated how they prompted the appropriation of technologies. Appropriation processes go beyond mere adoption and require users to make a tool their own (Bar et al., 2016). The lack of a centralizing in-person instructor figure prompted students and facilitators to perform a dynamic negotiation of roles to address tension points in each group.

In practice, participants adapted the online lessons to fit the synchronous, local, and face-to-face nature of the study groups and to reach their goals. For instance, there were instances in which participants could not relate to the video lectures or readings. Learners tried to circumvent challenges by talking to peers, skipping lessons, and relying on additional learning resources available on the internet (YouTube videos, learning websites, etc.). Participants also had to be creative when accessing the MOOC: the use of projectors, sound speakers, and laptops enabled and shaped peer collaboration within the groups. In other words, they covered the lessons that were interesting to them, relied on additional resources, and accessed the learning materials in innovative ways. These were the main strategies that they used to deal with the massified MOOC content that has been target of criticism by scholars (Fyfe, 2016; Jaschik, 2013; Santos, 2008).

That said, the MOOC design did not prompt more engaged forms of appropriation, such as revising and remixing content. Appropriation processes redefine who can use a particular technology, under what conditions and for what purposes (Bar et al., 2016). Both learners' intentionality *(use)* and artifacts affordances *(essence and design)* played a role (Barney, 2004) in how this process unfolded within

the Learning Circles. All groups had a somewhat structured plan for each meeting – doing readings, watching videos, taking quizzes together – that mirrored the structure of MOOC lessons and P2PU's recipe cards. There are other ways to participate in face-to-face study groups. For instance, individuals can have conversations that evolve more organically and talk about previous experiences, challenges, content-related questions, and doubts. However, the very structure of learning artifacts shaped interactions even when participants appropriated them. Relying on a structured plan is not inherently detrimental to learning; in fact, students enjoyed having support to keep them on track.

In the case of my participants, many were unfamiliar with online learning, which probably explains why they did not tweak the lessons more. However, appropriation processes lie in the intersection of technological affordances and social practices (Dourish, 2003), so it is also reasonable to consider the influence of the MOOC design in discouraging other forms of interactions. It is essential to highlight that, within a Learning Circle, a massive course is just one knowledge reference point among others. As a consequence, other online resources can replace them, and P2PU started to encourage tech-savvy collaborators to create their own courses (P2PU, n.d.-a). P2PU's materials have open licenses which favors more adaptation of lessons when compared with the copyrighted materials of xMOOCs.

Interactions informing the Learning Circles, nevertheless, subverted the top-down approach of xMOOCs because participants appropriated lessons/digital media, and engaged in peer collaboration without the help of an instructor figure. Agency is always a networked capacity (Bennett, 2005; Latour, 2005), and these interactions increased participants' ability and possibilities for becoming self-directed learners. My findings corroborate Chen and Chen's (2015) study and also suggest that face-to-face study groups expand participants' awareness of online learning resources. Participants in this study felt encouraged to take other online courses after joining a Learning Circle. Increased awareness was not limited to resources but also strategies for organizing decentralized groups because participants took turns being in charge of content related issues, group logistics, and conversation flows. Some groups had more vibrant interactions than others, but all Circles offered chances for participants to search for information across multiple platforms, reframe challenges to keep motivation, coordinate group logistics, and collaborate with peers. These tasks were time consuming; however, they also created opportunities for learning new skills. Kop (2011), for instance, highlights that many online educational opportunities require individuals to be autonomous and digitally literate. Granted, most interactions within Learning Circles took place in embodied spaces, and many participants were still learning how to navigate the Internet. However, Learning Circles allowed participants to become self-guided learners. In particular, P2PU's project attracted an audience that had little experience with online learning and, in many cases, low-income individuals. Thus, having access to Learning Circles at libraries can be especially beneficial to individuals facing economic and educational disadvantages.

CONCLUSION

In summary, Learning Circles brought together technical infrastructure, open educational resources, volunteers, and learners. They prompted students and facilitators to enact different roles so they could cover lessons together and navigate tensions in the study groups. These negotiations enabled a model of distributed knowledge and structured participants' study routines. My approach is not without limitations. Although these findings offer insights about other similar learning settings, they are not generalizable. Moreover, I studied a point in time of the Learning Circles project: their pilot round. Since then, this initiative expanded to other countries, so it is essential to understand how cultural specificities influence interactions within different study groups.

This research relies on a body of literature that refutes the dichotomy between humans and artifacts (Barney, 2004; Fischer, 1994; Latour, 1992, 2005; Slack & Wise, 2005). For this reason, I took a holistic approach to explore interaction taking place in the Learning Circles. These study groups do not

offer the same in-depth involvement with content/skills as a regular classroom, but they can help individuals to join other communities of practice (Damasceno, 2018). Similarly, findings from this study reinforce this idea and reveal that the interactions in the Learning Circles can benefit disenfranchised individuals by providing them with access to materials, resources, and a network of peers that can help increase their agency as learners.

In conclusion, this research suggests that it is fundamental to pay attention to learning initiatives that are unfolding outside the scope of traditional and formal education. Adults increasingly seek lifelong learning opportunities to develop new skills and knowledge, to adapt to changing circumstances, and to stay up to date with the latest advancements in their field or industry. While higher education can provide a strong foundation of knowledge and skills, it is often limited to a specific period in a person's life. By paying attention to new learning settings, researchers can empower learners and also shape the landscape of education in the 21st-century.

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