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"It was like a little community": An ethnographic study of online learning and its implications for MOOCs

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In this time of social, technical, educational and industrial upheaval, time and space are being compressed and stretched as social actors develop new practices in response to shifts in their lived experience. In the American educational sector, these phenomena have crystalized in the meteoritic rise of MOOCs, massive open online courses. The story of their ascent weaves together neoliberal shifts in financing education, technology developments, and perceived business opportunities. MOOCs have captured the imagination of the business press, venture capitalists, and university leaders. However, surprisingly little attention has been paid to the perceptions of students who are taking online courses – in other words, the users. Drawing on an ethnographic study of a small online class, this paper describes the limitations of MOOC pedagogies by comparison with low-enrollment online courses, and concludes by casting doubt on the effectiveness of MOOC learning experiences as well as MOOC business models.

INTRODUCTION

We live in a time of social, technical, educational and industrial upheaval. Time and space are being compressed and stretched as social actors develop new dispositions and practices in response to dramatic shifts in the institutions that shape their lived experience (Harvey 1990, Jameson 1991, Lash and Urry 1994). In the American educational sector, these phenomena have crystalized in the extraordinarily rapid rise of MOOCs, massive open online courses. The story of their meteoritic rise weaves together neoliberal shifts in financing education, technology developments, and perceived business opportunities.

The cost of an American public university education has risen dramatically over the last 20 years as states have reduced their support, shifting ever more of the financial burden onto students and their families. "Between 1990-1991 and 2009-2010, published prices for tuition and fees at public four-year universities more than doubled, rising by 116 percent, after adjusting for inflation" (Quinterno and Orozco 2012). For many students, it has become necessary to work part-time or full-time in order to pay for their education. This, in turn, has resulted in a longer average time to graduation (Kiss 2011). A second consequence has been that more students marry and start families before graduating. In this context, distance education has gained popularity as a way for students to squeeze their school time into available moments between work and family demands (Wasson 2007). It also saves on commuting time, and enables students who do not live near a college to access educational resources without uprooting their family or losing their job. At the same time, improvements in technology have made distance learning more accessible, as computing devices have become cheaper and internet connections have speeded up.

MOOCs are a new form of distance learning that has recently captured the imagination of the business press, venture capitalists, and university leaders. In the last two years, these massive open online courses have been heralded as the wave of the future in publications from *Forbes* to *Time Magazine* (Carlson and Blumenstyk 2012, Thrift 2013, Pappano 2012, Webley 2012). MOOCs are "open" in the sense that they are free and anyone can participate. They are "massive" in that they attract up to 160,000 registered students, although far fewer complete the courses (Rodriguez 2012). According to a recent *Time Magazine* article, MOOCs have been "heralded as revolutionary, the future, the single most important experiment that will democratize higher education and end the era of overpriced colleges" (Webley 2012). The story of MOOCs as a business and educational phenomenon is evolving quickly; every week seems to bring major new announcements. By the time this paper is published, the story will already have moved on.

However, surprisingly little attention has been paid to the perceptions of students who are taking online courses – in other words, the users. This paper reports on findings from an ethnographic study that compared the learning experiences of online and on-campus students. The online class studied was not a MOOC; it only had nine students. However, its pedagogy was positively evaluated by the students, and would not have been feasible with massive numbers of participants. The paper describes the limitations of MOOC pedagogies by comparison with low-enrollment online courses, and concludes by casting doubt on the effectiveness of MOOC learning experiences as well as MOOC business models.

AN ETHNOGRAPHIC STUDY OF ONLINE LEARNING

The methodology of this study includes an autoethnographic component that makes it somewhat different from many studies presented at EPIC, especially studies of consumers. Autoethnography, in which the "participant" part of "participant observation" takes on a more central role, has a long history in anthropology (Behar and Gordon 1995, Golde 1970, Okely 1992, Wasson 2006). It is not uncommon in the publications of applied anthropologists, for instance in the journal *Practicing Anthropology*, since it offers authors a way "to write about their experiences in a self-reflexive and holistic manner" (Wasson 2006:9). Autoethnography was in fact practiced by founders of the tradition of ethnographic praxis in industry that this conference continues and extends. For instance, Suchman et al. (1999) wrote about how their work at Xerox PARC "aimed at developing new forms of work-oriented, cooperative design" (1999:393).

In the present study, I report on student learning experiences in an online course that I myself taught at the University of North Texas (UNT). The study was organized as a formal research project, approved by UNT's Institutional Review Board, but I played a larger role in the phenomenon examined than would be the case in most ethnographies.

In fall 2006, UNT launched an online master's program in anthropology. It was the first such program in the United States. All aspects of the program, from curriculum to financial model, were collaboratively designed by the entire anthropology faculty, with myself as facilitator (Re Cruz et al. 2007, Wasson 2007). During our planning, we were very concerned about the stereotype of distance education as providing a second-rate learning

experience. We were committed to doing our best to ensure that the online master's program would be equal in quality to our well-regarded on-campus program.

One step we took to make the online program as similar as possible to the on-campus one was to have each professor who regularly taught an on-campus master's course develop the online version of that same course. I had taught ANTH 5010 "Anthropological Thought and Praxis 1" face-to-face since 2001, and therefore developed the online version. ANTH 5010 is a course on the history of ideas in anthropology, required of all students in the fall of their first year. In 2006, when the online master's program went live, I taught the online version of ANTH 5010 for the first time. I was also teaching the on-campus version that semester.

Simultaneously teaching online and on-campus versions of the same class was a fascinating experience. The courses were identical in so many ways – same readings, assignments, discussion topics, and so forth – yet due to the dissimilar communication media, the experiences felt strikingly different. I quickly decided to conduct research on the topic, and obtained IRB approval.

While the research project as a whole compared learning experiences in the online and on-campus versions of ANTH 5010, this paper focuses only on findings from the online course. In fall 2006, the class contained nine students. The primary medium of interaction was WebCT, a widely used learning technology that operated through web browsers. Each week, students read a short lesson online, and then engaged in seminar discussion using asynchronous discussion boards. In addition, I organized a weekly 1-hour teleconference. Participant observation was conducted through my participation in the course; discussions were downloaded and teleconferences were recorded and transcribed. In addition, a research assistant interviewed all class members after the semester was over. Interviews were recorded and transcribed. All fieldnotes, downloads, and transcripts were coded and analyzed using Atlas.ti.

RESEARCH FINDINGS

Students perceived online discussions as high quality

One anxiety the UNT anthropology faculty had when planning the online master's program was the question of whether the quality of online seminar discussions could possibly be as good as face-to-face discussions. Therefore, one of the most important – and maybe surprising – findings of my study was that the online seminar discussions in ANTH 5010 were in no way inferior to the on-campus ones, although they were quite different.

In interviews, the online students universally perceived class discussions to be sophisticated, in-depth, and high quality. While most had not previously experienced online classes, they regarded these new kinds of conversations as equal to or even better than equivalent experiences in face-to-face classes. Here are representative quotes that illustrate the students' perceptions, and provide some clues about reasons for the high quality of conversations:

> "They were deep, I think they were collaborative is another word I would use, deep and collaborative, there was a real sense of building on ideas"
>
> "I don't think I ever got this quality of discussion in any class I ever took on campus, because I think people have so much more time to mull over what they're thinking and when you write it out you see what you're thinking and you get to whittle it down"
>
> "It does seem a lot more thought provoking and it gives more opportunity for more in-depth study about what's being said and what's being discussed and I think that's interesting cause you know, the people that are doing it online really slow down and think about what they're writing. And also have a chance to research what they're writing before they put it out there."
>
> "The online- I mean it makes sense to me that you'd be able to have deeper discussions from the fact that you'd be able to think about what you were trying to say and craft like this great e-mail and articulate everything really well. And you know, that's a strength of the online program."
>
> "I think they are more in-depth because I think when you read someone's discussion answer or post and you answer to their post you can print out what they are saying, you can read it a number of times and then formulate your own opinions of it and I think it's more in-depth. I can think about what they are saying more. As opposed to on-campus, someone can just be talking and then someone jumps in and someone else jumps in, they're not really, it just goes like all over the place."

These quotes clearly demonstrate the students' sense that their discussions were a valuable learning experience, and point to some of the affordances of the communication media that contributed. As described in Wasson et al. (2007), which drew on Clark and Brennan's (1991) list of communication media affordances, two affordances of the class discussions were particularly helpful. One was *revisability*. Students were able to edit their messages until the text expressed exactly what the students wanted to communicate. The time pressure of face-to-face interaction was missing. The other was *reviewability*. Students were able to re-read each other's messages and reflect on them as they were constructing their replies. The evanescence of spoken words was missing. So the text-based, asynchronous technology of the discussion boards actually contributed to the quality of the seminar discussions.

Learning is social

In addition to the affordances of the communication media, online students also emphasized the importance of the social relationships they developed with each other and

with the instructor. Indeed, a fundamental insight in the education literature is that *learning is social*. Especially in courses where the goal is for students to develop a nuanced understanding of complex issues, class discussions allow participants to acquire new insights by collaboratively engaging in critical analysis. This is termed the "co-construction of knowledge" in the education literature (Gunewardena et al. 1997, Lapadat 2003). In such class discussions, each student's turn at talk builds on the previous one, and the discussion as a whole builds to increasingly sophisticated conclusions and understandings. The role of the professor is to facilitate discussion rather than lecture.

Studies of distance education have found that successful online courses weave together three kinds of "presence": *cognitive presence,* the collaborative exploration and construction of ideas; s*ocial presence*, the cohesion, trust, and open communication that develop within a community of learners; and *teaching presence,* the instructor's facilitation of the group's learning process (Garrison et al. 2001, Garrison 2007). While cognitive presence is what people commonly think of as learning, it can only occur effectively when supported by the other two forms of presence. In interviews, online students from ANTH 5010 articulated how these three forms of presence were interwoven in a way that allowed students to participate in the co-construction of knowledge:

> "I felt comfortable talking to other people in the class simply because of the environment [the instructor] created, and by that I mean the sense of openness and I think we seemed to have embraced that in the way that we kind of took that from her, took a lead from her"
>
> "[The instructor] was very encouraging of the discussions and nobody ever felt judged and there was never a "that's wrong"… and the other side of that is all the students. We were all very encouraging to each other, supportive of each other even if we didn't agree, it was always softly put, probably partly because that's the type of people we are and probably because it was a learning process and we were getting to know each other, but it just made for a really comfortable environment posting, it really felt like you were part of a class"
>
> "In the first few weeks of the class we talked constantly… and you know, you get really comfortable with people, you kind of get a sense of how other people are in the program and there's only so many people… it was like a little community"
>
> "With an online program it's easy to feel disconnected and isolated from the class and from the professor. And I think a way to overcome that is for the professor to really express their availability and their commitment to the class… For them to be a presence that's visible, that's recognizable, that you can count on, that says a lot for the potential of developing a virtual community… I don't think it's just the students for your support system, I think that's a vital component"

As developer of the online course, I incorporated features into the course design that encouraged the growth of social relationships and effective communication practices. I started the semester with an "icebreaker" conversation where students shared information about themselves and their local geographical and cultural context. The syllabus and the course's WebCT "Start Here" page provided explicit guidance for students on how to construct discussion posts, stating that the goal was to mirror face-to-face conversational interactions as much as possible. For instance, I advised students to write multiple short posts rather than one long "monologue." I also instituted a weekly teleconference, both for the sense of social connection that the phone offered, and to provide an additional communication medium to accommodate students' varied learning styles. In class discussions, I sought to model openness, respect, and intellectual curiosity, and encouraged all students to participate. Finally, I responded quickly to students, whether in class discussions, emails or phone calls – speed that turned out to be vital in creating a strong teaching presence.

The online master's program as a whole also included several features designed to build sociality among online students, and between students and faculty. Right before the start of their first year, each cohort was required to attend a three-day face-to-face orientation at UNT. This time together laid the foundation for relationships that students continued to build online. In addition, most students took the same set of required courses in their first year, allowing them to engage quite a bit with each other over an extended period of time.

TWO CONTRASTING MOOC PEDAGOGIES

How does the pedagogy of a small-enrollment online course compare with the pedagogy of MOOCs that enroll many thousands of students? The emerging scholarship on MOOCs has identified two contrasting pedagogical approaches (Daniel 2012, Pence 2012, Rodriguez 2012, Siemens 2012).

MOOCs originally emerged from a philosophy of learning called Connectivism, promoted by George Siemens and others. Courses in this vein have been labeled cMOOCs (Daniel 2012, Siemens 2012). Connectivism seeks to empower students to acquire knowledge and insight by forming learning communities that they themselves control and indeed construct. Typically, students in cMOOCs harvest information from the internet and other sources, share it with classmates, and discuss it, using "a diverse range of online tools, such as mailing lists, wikis, course management systems, web conferencing, video streaming, Facebook, Twitter, Second Life, Flickr, etc." (Rodriguez 2012). For Connectivists, then, learning is "the ability to construct and traverse connections" (Downes 2007), and pedagogy should focus on encouraging students to build connections and collaborations, and to harness information flows on networks (Kop et al 2011:74). The course topics that have been offered so far have been sophisticated explorations of online learning itself, such as: connectivism and connective knowledge (CCK 2008); personal learning environments and networks and knowledge (PLENK 2010), and mobile learning (MobiMOOC 2011) (Rodriguez 2012). cMOOCs have primarily attracted students who are already professionals and researchers, and therefore fairly self-sufficient as learners. Putting the learning process into the hands of the learners has thus worked fairly well (Kop et al. 2011:75). The term

MOOC is, in fact, based on the similarity between student interactions on cMOOCs and player interactions in massively multiplayer online games (MMPORGs) (Pence 2012:28).

However, while MOOCs originated with a Connectivist philosophy, the concept of massive open online courses was subsequently adopted by people with a very different understanding of learning and pedagogy. As one reviewer noted, the two kinds of MOOCs "are so distinct in pedagogy that it is confusing to designate them by the same term" (Daniel 2012:2). The second wave of MOOCs, termed xMOOCs, favors a more traditional learning approach. xMOOCs duplicate the pedagogy of large-enrollment face-to-face classes based on lectures and multiple-choice exams (Pence 2012, Siemens 2012). However, this type of passive learning approach is poorly regarded in the education literature, because students have been shown to learn more effectively when they are more actively engaged in their learning process (Gunewardena et al. 1997). Some critics, therefore, argue that xMOOC pedagogy "ossifies the already outdated mission of 19th-century education… it does not 'fix' what is broken in our system of education. It massively scales what's broken" (Davidson 2012). Whereas cMOOCs encourage students to use a wide range of online learning tools that they themselves select, xMOOCs present canned content using a narrow range of online tools, mainly videorecorded lectures by famous professors and multiple-choice tests, with a student discussion space and limited "office hours" by TAs (Rodriguez 2012:8). xMOOC course topics are generally targeted at an undergraduate audience. Early courses tended to focus on science/technology, but they are now expanding to a diverse array of subjects.

Of these two varieties of MOOC, it is xMOOCs that are receiving a high level of attention from the media, educational administrators, and venture capital. And the main focus has been on how universities are starting to adopt MOOCs. Courses offered through start-up companies that target universities, such as Coursera and Udacity, adhere to the xMOOC model, and the future expansion of MOOC offerings is expected to come mainly from for-profit ventures.

WEAKNESSES OF MOOCS

Of the three kinds of presence required for effective online pedagogy, only *cognitive presence* is easily supported by the MOOC learning environment. cMOOCs appear to be highly engaging intellectually (deWaard et al. 2011, Kop et al. 2011, Pence 2012, Rodriguez 2012). "When a Connectivist course is working well, one can see a great cycle of content and creativity that begins to feed on itself with people in the course reading, collecting, creating, and sharing" (Kop et al. 2011:80). The passive learning approach of xMOOCs makes intellectual engagement more of a challenge, but well-designed courses certainly have the potential to generate interest and encourage learning among students.

The potential for *social presence*, on the other hand, is severely limited by the high MOOC drop-out rate and other aspects of MOOC course design. As our ethnographic study found, having a small group of students interact regularly over the duration of a course lays the foundation for the development of the trust and sense of community that enables students to openly share ideas. The large numbers of students who enroll in MOOCS are not a problem for social presence per se. It is common practice to organize students in large classes into a lot of little groups. The problem is that MOOCs have an extremely high drop

out rate, from about 40% for cMOOCs to 85% for xMOOCs (Rodriguez 2012). Such a high attrition rate severely undermines efforts to build a sense of community within a group.

The pedagogy of Connectivist courses is explicitly based on collaborative interactions among learners and the co-construction of knowledge. And research on cMOOCs has found that collective scaffolding occurs in such courses, where "some participants assisted others to expand their understanding… and… helped them implement their own… projects" (deWaard et al. 2011). However, the interactions are relatively fleeting and superficial, compared to those in the ANTH 5010 course described above. Studies of cMOOCs have found that while "many participants realized the importance of connections with other learners and of relationship building to advance learning… they found these things extremely hard. Some learners did manage to be connected with a few others and interact in small groups" (Kop et al. 2011:87). cMOOC students identified a variety of reasons for having difficulty building connections, including the lack of a centralized course structure; course goals being set by each participant for themself rather than by the instructors; the fragmentation of conversations due to a plethora of online tools; lack of skill in the use of tools; and lack of adequate time to participate (Kop et al. 2011:86).

Finally, the potential for *teaching presence* is limited for MOOCs due to the extremely high ratio of students to instructors. For instance, in 2011 the Stanford course CS221 Artificial Intelligence enrolled 160,000 students, of whom 20,000 completed the course (Rodriguez 2012). As there were two instructors, the student:teacher ratio ranged from 80,000:1 to 10,000:1. Obviously instructors cannot spend much time with students in this situation.

cMOOCs deemphasize the importance of the instructor; the Connectivist philosophy puts "the responsibility for information gathering, the validation of resources, and the learning process in the hands of learners themselves" (Kop et al. 2011:75). In fact, instructors are reconceptualized as "facilitators." However, this "requires learners to be autonomous in their learning and to have advanced analytic and synthesis skills" (Kop et al. 2011:75). Since cMOOC participants have tended to be researchers and professionals, many are able to manage these demands, although evaluations in one study included comments such as "Too little participation and interaction by the facilitators. Be sure to provide a higher level of participation by facilitators" (Kop et al. 2011:86).

The xMOOCs offered by various start-up ventures need to be differentiated with regard to their intended audience. Some firms, such as Udemy, target professionals who are looking for individual courses that provide a specific skill. As mentioned above, teaching presence may be less critical for experienced professionals. However, more often MOOC firms target undergraduates and offer introductory level courses; examples are Coursera and Udacity. For their courses, the lack of teaching presence is a greater problem since undergraduates typically need more learning support.

Ironically, the students who most need social presence and teaching presence are also the most likely to enroll in MOOCs. Economically disadvantaged students tend to arrive at college less well prepared than those who are well off. At the same time, the companies developing MOOCs are marketing them as more affordable alternatives to face-to-face courses. So economically disadvantaged students are more likely to get tracked into MOOCs. Without the support of a sound pedagogy that interweaves cognitive presence with social presence and teaching presence, these students are then more likely to fail. This

irony has led to passionate critiques that MOOCs will reproduce and exacerbate class differences in our society. For instance, Carlson and Blumenstyk (2012) claim that advocates of MOOCs, "many of whom enjoyed liberal-arts educations at elite colleges, herald a revolution in higher education that is not for people like them or their children, but for others: less-wealthy, less-prepared students who are increasingly cut off from the dream of a traditional college education… Here's the cruel part: The students from the bottom tier are often the ones who need face-to-face instruction most of all" (2012:2). San Jose State University recently "paused" its use of three remedial math MOOCs because of poor student performance; no more than 51% of students passed in any of the MOOCs, while at least 74% of students in the equivalent face-to-face classes passed (Rivard 2013).

CONCLUSIONS

MOOCs are an extremely fast-moving phenomenon. Every week seems to bring an intriguing new development. By the time this paper is published, the evolution of the MOOC phenomenon will already have moved further along its trajectory. I can only hope to highlight a few longer-term trends and possible directions that the MOOC trajectory may take in the future. Here, then, are three predictions:

One lasting value of the MOOC phenomenon will be that it brings greater acceptance and status to distance education. The engagement of elite universities such as Stanford, Harvard and MIT has started to change the long-standing negative perception of distance learning as being solely the province of low-status universities. It has legitimized the idea that as our society moves toward greater reliance on social media, in both personal and work contexts, it is reasonable for the education sector to adopt technology-mediated forms of communication as well.

At the same time, I suspect that the hype around MOOCs will die down considerably once their strengths and weaknesses have been more clearly identified. There will be some initial "ups and downs" as particular universities experience dramatic successes and failures. Over time, leading practices will emerge that improve current MOOC pedagogies. However, the constraints on social presence and teaching presence will not go away. Eventually, MOOCs will be seen as a limited-purpose tool that conveys limited benefits in a limited set of contexts.

I fear that MOOCs may end up contributing to the ongoing bifurcation of American society. Many studies have demonstrated that the rich are getting richer, while the poor are getting poorer (Burkhauser et al. 2012). An important factor is the disparate educational experience of children from different class backgrounds. Children from low income neighborhoods are often not as well prepared for college as those from higher income areas. At the same time, as states reduce their support of public universities, the rising cost of college is making it increasingly difficult for low income students to afford a degree. Consequently, university administrators may feel pushed to offer MOOCs as a way to make college education more accessible to students who are struggling financially. And such students may feel pushed to take MOOCs. Yet their educational experience will not be as beneficial as that of students in traditional classes, due to the limitations on teaching presence and social presence. MOOC students will be more likely to fail, and they will not

have as much opportunity to build relationships with classmates that could contribute to their intellectual and professional development.

The findings and predictions presented in this paper raise doubts about the business model of MOOCs as a profit center for universities. Start-up ventures to sell MOOC services to universities are being developed, and universities are starting to replace some internal courses with contracted MOOCs. It should be noted that when MOOC are offered through universities, the "O" of "open" in the MOOC acronym is no longer correct; these courses are only accessible to students who have been accepted by the university, and are not free. In any case, the MOOC business model may not be successful in the long run if there is a high failure rate for college students. While many in the business world are touting the financial opportunities of MOOCs – Forbes has called it "the $1 trillion opportunity" – others are wondering if this is just another example of excess hype around a new kind of technology company (Davidson 2012). Through the Freedom of Information Act, the *Chronicle of Higher Education* obtained an agreement between Coursera and the University of Michigan. According to the *Chronicle's* analysis, "the contract reveals that even Coursera isn't yet sure how it will bring in revenue. A section at the end of the agreement, titled 'Possible Company Monetization Strategies,' lists eight potential business models" (Young 2012:1). None have been successfully carried out yet.

MOOCs may also have business implications concerning the next generation of employees. By contributing to the decline of American higher education, MOOCs could make it harder for industry to find qualified employees. Education in the U.S. already compares poorly to other countries; according to a recent OECD report, "U.S. ranks 14th among 37 OECD and G20 countries in the percentage of 25-34 year-olds boasting higher education attainment... higher education attainment levels in the U.S. are growing at a below-average rate compared to other OECD and G20 countries" (Huffington Post 2012).

In addition to assessing MOOC business models, this paper contributes to the EPIC community by illuminating online learning issues. Theories of learning, such as activity theory and the concept of communities of practice, have been foundational in the development of ethnographic praxis in industry, starting with projects at Xerox PARC and the Institute for Research on Learning (Nardi 1996, Orr 1996, Suchman 2007, Wasson 2000, Wasson and Squires 2012). As such projects have demonstrated, learning can be conceptualized more broadly than what happens in the classroom, encompassing workplace activities as well as other contexts. The present study contributes insights on learning that is technology-mediated. Members of the EPIC community may be able to apply these findings in their own organizations, or to client projects on related topics.

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