UNDERGRADUATE STUDENTS' EXPERIENCES OF TIME IN A MOOC: A TERM OF DINO 101

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ABSTRACT

This research explored what it is like for university students to participate in a Massive Open Online Course (MOOC) as part of their undergraduate course load. We report on some of the temporal dimensions of students' learning experiences as they undertook the MOOC during a regular, campus-based university term. The research is situated in a "phenomenology of practice", a form of qualitative inquiry that eschews participant opinions and instead gathers and focuses on his or her lived experience descriptions (LEDs), that is, recollected, everyday moments that transpired for a student while learning in the MOOC environment. In the paper we present several of these descriptive snapshots of the lived world of the MOOC for undergraduate students and for each LED, we offer a brief phenomenological reflection on the theme of temporality.

KEYWORDS

Learning experiences, MOOCs, phenomenology, temporality

1. INTRODUCTION

Some scholars claim that Massive Open Online Courses (MOOCs) offer unprecedented openness, democratic pedagogies, less hierarchical knowledge creation, and unimagined scalability. Others suggest that these large-scale courses represent an historic shift in how education will be designed and delivered in the future. However, research has yet to confirm or refute the bold claims rationalizing the popularity and efficacy of these big virtual learning environments or their disruptive, game-changing potential for education. As Neil Selwyn (2009) has argued regarding strident claims made in advance of other educational technology trends, a "counterbalance to some of the more hyperbolic elements of [the] discourse" (p. 74) is needed, and in particular, through providing accounts of the complex realities of learners' actual experiences. This research offers one such account.

The study is based in a larger qualitative research project that collected and analyzed students' everyday experiences of learning in a Massive Open Online Course, specifically the first offering of *Dino 101: Dinosaur Paleobiology* (Dino101), taught in Fall 2013 by Dr. Philip Currie and Ms. Betsy Kruk of the University of Alberta (UofA), Canada. Dino101 was Canada's first MOOC to offer course credit to UofA students as well as credit-by-proxy for a fee to participants from across the world. In its Fall 2013 offering, Dino 101 attracted more than 23 thousand participants from around the world (University of Alberta 2014), of which 450 were campus-based undergraduate students at the UofA. The course was built using the Coursera backbone and consisted of 12 weekly lessons with an estimated workload of 3-5 hours/week for non-credit participants, and 7-10 hours/week for credit. When the course opened, all 12 lessons were released, and although students were encouraged to follow the prescribed timeline, they were free to complete the course at their own pace. Each week included short video lectures with integrated quizzes, occasional interactives, as well as optional discussion boards and online student Wikis.

In our study, four major learning modalities were identified and examined separately in order to reveal similarities as well as differences between their experiences: 1) Students undertaking the course for free; 2) Students registered for accreditation for a fee; 3) UofA students enrolled in the MOOC for credit as either a fully online course (PALEO 200); and 4) UofA students enrolled in a blended version of Dino101 with a weekly in-person seminar (PALEO 201). All together, we conducted thirty in-depth phenomenological interviews with students representing each of these four categories. This paper focuses on the experiences of

undergraduate students who undertook Dino101 as an online-only course (PALEO 200) during a regular, campus-based university term. In particular, we focus on these students' lived sense of time in and around this MOOC.

2. CONTEXT AND METHODOLOGY

2.1 Research Context and Questions Addressed

Empirical studies of students' MOOC learning experiences are still limited. In the context of Siemens & Downes (2011) *Connectivism and Connective Knowledge 2011* cMOOC, Littlejohn (2013) conducted a mixed-method study about learners' engagement patterns and identified three levels of engagement: active, lurkers and passive participants. These results are comparable to Kizilcec, Piech & Schneider's (2013, April) learning analytics findings across three xMOOCs; their study showed four distinct student engagement trajectories: completers, auditors, disengaged learners and samplers. In two other xMOOC data mining studies of "first MOOCs" (edX's "Circuits and Electronics" and Duke's "Bioelectricity"), concern was expressed regarding low completion rates, and suggested "persistence" was a key variable determining student success (Belanger and Thorton 2013; Breslow et al 2013). Belanger and Thorton (2013) noted that a MOOC's time commitments might prove prohibitive for some students.

MOOC's prominently self-paced feature has directed some researchers to attribute students' persistence to the availability of study time and to the discipline of self-direction and regulation. A California-based study (Tornsaufer 2013), that compared student retention rate among different social backgrounds in the context community college online credit courses, concluded that further study is needed to investigate if lack of time is a reason of dropping-out. In their recent review of the MOOC completion rate literature, Khalil and Ebner (2014) echoed Tornsuafer's call for further research in this area. Both quantitative and qualitative researchers have recognized the time-sensitive nature of MOOC learning by, for instance, identifying the significance of students' early engagement in online discussion forums (Yang 2014) and noting the time needed for a new learner to establish a sense of learning community (Waite et al 2013). A recent case study (Chen and Chen 2014) revealed students' concerns over dropping a MOOC, and suggested that low retention rate may be more a matter of time management rather than the shortage of time. Along these lines, some researchers have focused efforts on developing learning assistive software to support students in managing their time in a MOOC (Gutiérrez-Rojas et al 2014; Alario-Hoyos et al 2014). However, no studies to-date have methodically addressed the everyday "realities of learners' actual experiences" (Selwyn 2009, p.74) related to the temporal dimensions of a MOOC.

The authors' previous study of free MOOC completers examined some of the lived relational dimensions of MOOCs and found that an intimate and pedagogically powerful tutorial sphere seemed to develop for some students while watching the video lectures (Adams et al 2014). In the current study, given MOOC's low retention rates and its possible relationship to time demands and limitations, we examine the temporal dimensions of one MOOC, specifically, how time is experienced and lived for campus-based students taking Dino101 as part of their regular full-time program. Our intent is to tease out possible differences between a MOOC and a regular university course with reference to time. Thus this research asks: What is it like for undergraduate students' to take a MOOC for credit as part of their campus-based program and how is time lived in the unfolding of this experience?

2.2 Methodology and Data Sources

In order to study the lived experiences of university students learning in a MOOC, we adopted Max van Manen's (2014) "phenomenology of practice". This qualitative research approach is based in continental philosophy and employs a variety of human science as well as philosophical methods. It aims to explore the everyday structures of "pre-reflective" human involvements, i.e., how we experience our everyday lives rather than how we may conceptualize, theorize, or even rationalize them afterwards. Through gathering examples of lived-through moments or "lived experiences", phenomenology seeks to reveal overlooked, unexpected, as well as taken-for-granted dimensions of a particular human experience, here, the phenomenon of learning in a MOOC as part of a university student's full-time studies in a campus-based program.

For this study, phenomenological data was generated via in-depth, one-hour long, phenomenological interviews with thirty Dino101 completers, either in-person or via Skype. Ten of the thirty participants were UofA students. Interviews were transcribed and culled for Lived Experience Descriptions (LEDs). An LED is a specific moment or event that a student recollects that occurred in the context of learning in Dino101, and specifically excludes (edits out) personal opinions that the student may offer retrospectively about the moment or event, or about MOOCs in general. Phenomenological analysis was then conducted on each LED via the application of multiple heuristics including existential analysis and eidetic reflection. Eidetic reflection derives from Phenomenology of Practice's philosophical tradition, and involves performing techniques such as comparing the LED with similar but distinctly different experiences, in order to draw out unique meaning aspects of the phenomenon.

Existential analysis examines each LED across the universal themes of lived relation (relationality), lived body (corporeality), lived time (temporality), lived space (spatiality), lived things (materiality), and lived technology (mediality). Existentials are universal because they are always already at play in everyone's lifeworld (van Manen 2014). For example, relationality describes our sense of community, of contact, of intimacy and closeness to others, whether others are physically present with us or not. Indeed, lived relation may even be experienced as ones relation with oneself, or of having no sense of relation at all with others. In a previous study of students experiences of a variety of xMOOCs (Adams et al 2014), we examined this existential in terms of a student's relational sense of the instructor; we were surprised to discover that some students developed a very strong sense of relation to the instructor in the context of the video lectures. In conducting our analyses of the Dino101 LEDs, specifically those described by the UofA student participants, "lived time" surfaced as an interesting existential theme with multiple variations. Phenomenologically speaking, "lived" time is distinguishable from "clock" time: an hour seems to pass much more quickly when I am enjoying a coffee with my friend, than when I am bored or waiting impatiently for someone to arrive. While each of these experiences may transpire over the same hour (clock time) and in the same place (a cafe), each event is experienced differently in terms of lived time (and indeed, lived space).

Finally, it is important to note that phenomenology does not aim for generalizability in the usual empirical sense. For example, it makes no claim to articulate universal "essences" or immutable themes. Rather, phenomenology is concerned with describing *possible* human experiences and with revealing unique or singular meaning aspects that seem to inhere in the phenomenon being studied: "phenomenology describes not the *factual* empirical but the *existential* empirical meaning structures of a certain phenomenon or event" (van Manen 2014, p. 353). Phenomenology attends to what is *recognizable* and what is *singular* about a particular human experience.

3. FINDINGS

The analysis that follows provides four Lived Experience Descriptions or "snapshots" of the world of Dino101 gleaned from our interviews with five PALEO 200 undergraduate students. Each LED is followed by a brief phenomenological reflection. The LEDs were selected based on a unique aspect of lived time that we uncovered during the existential analysis phase of the project, and in some instances, found across multiple LEDs. Other relevant LEDs were not included here due to space constraints.

3.1 A Four Day Course

Last term, I was taking five classes at the same time. Since Dino101 was an online course that did not require me to go to a class, I wasn't always thinking of it. Actually, after registration, I totally forgot about it until midterm! All of a sudden, among the craziness of my four other classes, I realized, "Oh no, Dino! I forgot about Dino!" So three days before the midterm, I watched the first half of course content—Chapters 1-6—all at once. Then I reviewed the notes in one day. The final exam was not much better either: I watched Chapters 7-12 in one day and spent the next day reviewing right before the exam. Perhaps what I should have done is one chapter every single week—but, in reality, I only spent four days in the course. (Paul, Dino101/PALEO 200 student)

Although MOOCs usually begin and end on set dates, many allow self-paced learning that affords students significant freedom and autonomy. Of course for some students, this can translate into pushing some or all of the required learning to the last minute. For Paul, an undergraduate student, Dino101 was one of five courses he was taking for credit during the term. His primary interest in taking the course was not the topic of Dinosaur Paleobiology *per se*—although that could certainly be a welcome side effect—but the fact that it was fully online. While his other four courses required him to attend weekly classes, Dino101 demanded no such routine, and it quickly slipped his mind until midterm time. On the one hand, it seems astonishing that a student can consume six weeks of classes—roughly equivalent to 18 instructional hours—in one sitting, followed by another day to review, then proceed to a university level midterm; then repeat the same formula for the final exam. Of course, one could hardly expect to do this successfully in every subject area! On the other hand, perhaps any sense of astonishment one may have at this accomplishment is based on a taken-for-granted but unexamined view of the semester system, which typically allocates courses bi- or tri-weekly class meeting times spread over three or four months.

The Latin root for "course" means "a running race or course", and stems from the verb *currere* "to run" (*Online Etymology Dictionary* 2014). The word curriculum also derives from this root. A course of learning is thus not only about the distance a student has traveled, typically measured by the amount of content or "ground" covered, but also the time the journey takes from beginning to end, including its tempo, process, motion and rhythm. Clearly a course of learning may not be summarized in a physics equation such as "distance equals to speed multiplied by duration/time", yet as the root *currere* implies, a modicum of speed is nonetheless expected. Indeed, why not allow all students to whiz through their courses at whatever speed seems appropriate? In truth, learning—beyond what may be minimally required to pass a multiple choice exam—needs both planned and sometimes unexpected moments for a student to slow down, speed up, pause and ponder for a while, as well as opportunities for practice and integration over time. Thus while a four day course is doable, it hardly seems desirable in the long run. And in the context of Paul's four-year undergraduate program, four days of Dino appeared to be a relatively painless way to achieve credit for one of the required science courses for graduation. Here, economies of time seem to supersede educational intent.

3.2 Learning like a Machine in a Limited Time

Two weeks before the exam, I started on Dino101. Each day was quite intensive because of the high volume of information. I sat at my desk with my earbuds in and a pen and paper in front of me. As I watched the video, I jotted down what the instructor said. When the video was finished, I closed my laptop, pulled the chapter summary from the side, and took out a highlighter to compare and mark what wasn't included in the videos. Then I made myself a worksheet and put it to the side. Before the next video, I gave myself a break before coming back to my worksheet to check what information I still retained. I was learning like a machine within such limited time: I just have to keep figuring out the needed information until I feel confident. Once there's a topic where I'm confused, I write it on the list and I watch the video again, where I listen very carefully to understand what is being said. If I get side tracked, when I come back to the video so much information would have passed. (Kate, Dino101/PALEO 200 student)

Computer, headphones and printed notes, paper and pen at hand—Kate deliberately builds a rational space and routine for her learning. In doing so, her sense of time also shrinks to the size of the mechanical structure built by her. In her words, she is learning "like a machine". Yet, what does this mean? A machine, whether simple or complicated, is programmed to achieve a pre-determined goal; it stays on task unless something breaks. As Kate observes, if she gets side tracked, "so much information would have passed". She is highly focused, but only to retain the information for the purposes of the upcoming examination. In this sense, learning in Dino101 for her can be compared as an information gathering and checking process, a programmable, step-by-step procedure. And yet, perhaps programmed time is less temporal since there is less sense of future, only the next repetition of the task. Possible meaningfulness of content withdraws in service of efficiency toward another end: passing the exam. Here, the MOOC videos and its chapter summaries afford the possibility of a precisely timed and highly efficient consumption of information. But is this the kind of learning intended? Or perhaps it is the kind that is encouraged in our current technologized milieu?

3.3 Being Slowed Down When Learning With My Brother

At some point after midterm, I just randomly threw out an idea to my brother, who was also taking Dino101: "Hey, do you think it'd be better if we do this together?" And he said, "Sure". So we started to watch the lectures and study together. There was an interactive called "Geological Timescale" with geological time periods for us to click and explore. At first I just wanted to rush through and glance it over: It's impossible for them to test on every single detail anyways. But my brother wanted to read through the whole scale: "Do you want to read it out loud?" "OK, sure." I clicked and started reading the big terminologies. I was slowed down. My brother waited patiently until I finished, then asked if I understood them all. If not, I then took time to read them again quietly. Then I handed him the mouse and he started to read. We went through each major and sub category. It was a huge project that took us around 40 minutes. (Michael, Dino101/PALEO 200 student)

Rather than rushing through the interactive exercise on the MOOC, which would have been his habit (since it would surely not appear on the test!), Michael was "slowed down" by his brother and his suggestion that they read the terminologies out loud. Just as a parent establishes a pedagogical space by reading a bedtime story together with their child, the two brother-classmates convened a sphere of learning by reading out loud and attending to the strange and somewhat obscure terminologies together. The occasion of this shared and memorable learning experience was a unique interactive timescale available in the Dino101 MOOC. But too, the timescale and its detail would have been quickly passed over but for the presence of another learner with a somewhat different approach to learning.

Michael observes that, "I was slowed down". And in slowing himself down to his brother's speed, a "huge project" was accomplished—yet it only took 40 minutes! The student was surprised that he has spent so much time on something he would have otherwise overlooked, but too, he recognizes it as a meaningful project that was worth the time commitment to see it through.

3.4 All Checked Off and a Moment of Silence

It's the last lecture for me and my brother. After Betsy thanks us for completing all the video lectures, I stare at the blank screen and think, "That's about it." All the videos are checked off. Now I don't have any more video lectures to watch. I feel a bit upset. I could have spent much more time on it. My brother sits still at his usual spot on my left. A brief moment of silence between us. "OK, time to review the notes". We exchange a look, stand up, and head back to our own bedrooms to study. The class is not yet done. We have to prepare for the on-campus final exam that takes place in two days. (Michael, Dino101/PALEO 200 student)

In the very last class in a face-to-face course, after a few last remarks about the final exam or paper, the instructor wishes students good luck and smiles as she watches them file out the room. The moment may quickly dissipate as students approach her about last minutes questions or simply to thank her and chat. In the face-to-face context, the end of a course is usually experienced as a fading out—gradually, students prepare themselves for its completion. In the case of Dino101 and other video-based MOOCs, the lectures may maintain a rather unchanged quality or density throughout the course. Once the final video is watched, the MOOC instructor may seem to just suddenly disappear, leaving a blank or frozen image on the screen for the student to face. As Michael puts it: "that's about it." No more videos to watch. All are checked off. The moment triggers a sense of regret: so much more time could have been spent attending to the lectures, perhaps exploring the material more deeply. Of course there is nothing stopping him from re-watching the videos or pursuing the topic in more depth. Nonetheless the end has been marked with a sudden and unexpected decisiveness.

Each watched lecture has been checked off, like days crossed off on a calendar until the last day arrives. Clearly the MOOC space has been designed to afford easy tracking of ones progress and guarantee nothing would be left out in the end even for a most careless learner. In some sense, the progress tracking may turn MOOC video lecture into a student's inventory. As Michael reflected, "I don't have any video lecture to watch". The stock of video lectures is emptied, exhausted, as blank as the screen, not only for him, but also for his brother. A moment is silence is shared. Then it is time to move on and return to studying.

4. CONCLUSION

This study presented a preliminary analysis of the existential of lived time as experienced by full-time university students while taking a MOOC for credit. We discovered that some students crammed the course into a few days, and others methodically plowed through. Here, time seemed to pass in a frantic or machine-like blur: the videos and texts were simply information that needed to be quickly and/or efficiently consumed for the sole purpose of passing an exam. Yet for others, the experience was also punctuated by surprisingly poignant moments—the hour spent working through difficult vocabulary with a brother, the sudden end of the MOOC video lessons unambiguously marking the end of an enjoyed course. Here, time slowed down and expanded or paused unexpectedly with a regretful air of finality and appreciative reflection. In both cases, the moment or event suddenly overflowed with memorable significance. Of course, it is impossible to design for such moments—they simply happen. Yet it must also be admitted that new possibilities have been opened by MOOCs, providing the unique occasion for such moments of unanticipated significance to unfold.

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