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Digital culture clash: "massive" education in the E-learning and Digital Cultures MOOC

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Digital culture clash: "massive" education in the *E-learning and Digital Cultures* MOOC

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While education has been both open and online, the sizeable enrolment numbers associated with massive open online courses (MOOCs) are somewhat unprecedented. In order to gauge the significance of education at scale, this article analyses specific examples of massive participation derived from E-learning and Digital Cultures, a MOOC from the University of Edinburgh in partnership with Coursera. Student-created content, user statistics, and survey data are illustrated to examine the experiences and repercussions of engaging with educational activity where participants number in the tens of thousands. This activity is shown to mirror established instructionist or constructivist approaches to pedagogy. However, rather than working with "massiveness," these positions are suggested to oppose large participant numbers. Concluding remarks propose an irreducible diversity of participation, rather than a generalised categorisation of "student," and call for future considerations of the MOOC to move beyond individualism and self-interest.

Keywords: MOOC; instructionism; constructivism; connectivism; individualism

Introduction

In response to the hyperbole about the institutional disruption and technical innovation imposed by massive open online courses (MOOCs) (see Adams, 2012; Lewin, 2012; Marginson, 2012; Pappano, 2012; Pérez-Peña, 2012), those working in open and online education have been keen to bring attention to the different histories and contexts in the field (e.g., Yuan & Powell, 2013). Weller (2013) described the prominence of MOOCs as merely the "visible aspect of a broader debate/battle/tension—which is around the role of openness in education" (p. 2), alluding to the considerable body of scholarly work in this area. Looking beyond the conventional claim that digital technology has been the primary determinant of the open education movement (e.g., Brown & Adler, 2008), Peter and Deimann (2013) have made the case for a rich tradition of open educational practices spanning from the beginnings of monastic scholarship, through the coffee house culture of eighteenth-century Europe. Peters (2008) also provided a historical analysis of "openness" through a discussion of Open Educational Resources, a movement which has prompted considerable research on cultures of sharing and reuse of material (e.g., D'Antoni, 2008; Hilton III, Wiley, Stein, & Johnson, 2010; Okada, Mikroyannidis, Meister, & Little, 2012; Richter &

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McPherson, 2012; Tosato & Bodi, 2011), or ways of bypassing institutional systems of accreditation (e.g., Macintosh, McGreal, & Taylor, 2011).

Additionally, many have challenged the pedagogical rationales of the institutionally affiliated MOOCs on the grounds that they do not offer anything disruptive to established educational practices (e.g., Bustillos, 2013). In questioning the value of the flipped classroom strategy endorsed by Coursera, Bogost (2013) declared, "The lecture is alive and well, it's just been turned into a sitcom" (p. 11). Those critical of an impoverished pedagogical model often emphasise the origins of the acronym MOOC, coined in response to a much more radical and experimental course format (see Siemens & Downes, 2008) underpinned by the proposed learning theory of connectivism (Siemens, 2005). It is claimed that such histories and contexts have been largely overlooked, both by the promotion of Coursera, edX, and Udacity, as well as by those critical of the recent MOOC phenomenon (Stewart, 2012). Following from such concerns about whether the MOOC actually offers anything innovative or transformative, what follows is motivated by an interest in what might be genuinely new about this emerging educational format.

This article suggests that "massiveness" constitutes not only something unprecedented in education, but also something of significant value to continued work in an educational domain that is becoming increasingly global in its capacity and reach. In what follows, the case will be made that massiveness is more than simply large enrolment numbers. Such statistics are habitually emphasised in media coverage (Lewin, 2012; Marginson, 2012) and heavily publicised by MOOC organisations themselves, for example, Coursera's dynamically updating figure for "Courserians," at the time of writing over 6 million (Coursera, 2014). Huge enrolment numbers are also central to the promotional videos released by edX (2013), suggesting "imagine taking a class with a hundred thousand or more students." Two further videos claim that edX's ambition is to enrol a billion students from around the world (edX, 2012a, 2012b). However, this engagement with large numbers is largely based around the idea of education at *scale* (Stewart, 2013). In other words, it is the replication of an identical educational experience that can be transmitted to large numbers of students. The dominant considerations of massive participation have thus been concerned with productivity and "efficiency measures that hope to aggregate fewer higher-level (and higher-cost) educational encounters and standardize them for regularized future delivery" (Bogost, 2013, p. 13).

Stewart (2013) provides an alternative vision, in which massiveness is considered in terms of the opportunity to expose large numbers of students to digital literacy practices and networked environments. Here, the MOOC is judged to hold the potential to expose individuals to "open, decentred practices and distributed expertise" (p. 236). Thus, the massiveness of the MOOC has tended to be defined and understood in terms that reflect the xMOOC and cMOOC distinction (Siemens, 2012): either as the scaling of centralised and identical instruction to unprecedented numbers of students or the opportunity for self-directed learning, in which large participant numbers are understood as providing the means to construct knowledge independently of teachers and institutions (Rodriguez, 2012, 2013). As shall be discussed, these instructionist and constructivist understandings of education manifest as the dominant approaches to MOOC pedagogy. However, beyond such expectations, under-theorised in MOOC literature is the question of what happens when thousands of people come together and orient themselves around a specific arrangement of educational material.

E-learning and Digital Cultures

E-learning and Digital Cultures (known as EDCMOOC) was a five-week MOOC first offered in January 2013 and co-taught by the author. It was developed around the theme of "the digital" across education and popular culture. The course was split into two blocks: utopian and dystopian themes, and notions of the human being in relation to technology. The EDCMOOC utilised a range of public domain short films and open access academic literature as the primary resources. These were curated and annotated by the course tutors as the grounding for student activity, which included discussing themes in the Coursera forum and in personal blogs or other forms of social media. Two live Google Hangouts took place, in which the tutors talked about the weekly themes and emerging topics from student discussion. An image competition was held in week 3, inviting students to represent a course theme visually. The final assignment required students to create a multimodal digital artefact—an image, video, or web resource—that represented or explored any of the themes encountered during the course. These artefacts were to be made visible online for subsequent peer assessment. Peak enrolment on the EDCMOOC was 42,844, of whom 21,862 participants were measured as being active within the Coursera pages of the course, constituting a conversion rate of 51% (MOOCs@Edinburgh Group, 2013). The enrolment number places the EDCMOOC close to the typical MOOC figure of 50,000 enrolees (Jordan, n.d.); however, the measurement of active participation is considered more significant for this article. Nevertheless, the importance of this number is questionable when the design of the EDCMOOC is taken into consideration, as discussed below.

The EDCMOOC manifested a particular kind of massive participation: one that incorporated both the diversity and distribution of large participant numbers. This was the (not always intentional) result of three principal design decisions: the foregrounding of discussion and interaction as the main student activity, the inclusion of student-created work as course content, and the lack of formal group allocation. The course was designed with the intention of challenging what was perceived to be a prevailing tendency in Coursera MOOCs for transmissive pedagogy in the form of video lectures. The typical Coursera offering is behaviourist (Rodriguez, 2013), foregrounding pre-recorded video as the primary course content—the watching of which is predominantly a solo activity—frequently interspersed with multiple choice quizzes. In the EDCMOOC, public domain resources were curated and presented with the aim of encouraging students to explore, interpret, and discuss themes with some level of independence. The resources, in particular the short films and animations, did not provide definitive explanations of the course themes, but rather were intended to serve as stimulus for open-ended discussion and debate. Furthermore, there were no pre-determined learning outcomes or formative quiz testing, features which are somewhat standard in many other Coursera offerings. Thus, what the teaching team considered valuable in the EDCMOOC was not explicitly or exclusively contained within the teacher-curated resources, as they might be within a video lecture, or specifiable as definitive or universal outcomes. Rather, the emphasis was on responses to this material in the form of interactions and discussions, through which students might shape a particular understanding of the course themes. This orientation invited multiple interpretations and responses, which, due to the scale of participation, produced course themes that became diverse and multifaceted. This interpretation is not intended to negate the importance of the teacher-curated

material, or the role of the teacher, but rather to acknowledge the intention that course themes were to be expanded and developed by students.

As a result of such interpretations, forum activity, blog posts, and the use of social media quickly generated huge amounts of course content in addition to that placed on the Coursera platform by the teaching team. The forum within the Coursera platform acquired 1430 threads, containing 8718 posts and 5146 comments. Of the participants, 2615 posted in the Coursera forum and 1444 commented on existing posts. Outside of the Coursera pages, a blog aggregator was developed to collect and combine posts from the personal blogs of participants, and this was considered as a central resource for EDCMOOC material. This aggregator generated 1340 posts from 300 of the 900 submitted RSS feeds (Scott, 2013). During the course, 4820 participants joined the student-created Facebook group, which became a lively space for conversation and the sharing of additional content. A similar Google + group attracted 1945 members. Twitter became a significant site of course activity in the form of communication and the sharing of blog posts and additional course-related material, utilising #EDCMOOC. In a period of build-up, duration and aftermath, from 7 November 2012 until 14 March 2013, a Twitter analysis reveals 18,745 unique tweets. The daily number of tweets peaked at 720 on 16 February. The considerable activity outside of the Coursera platform is indicative of the extent to which the EDCMOOC could be considered a distributed course space. It also may call into question the importance of the active participation figure derived exclusively from the Coursera platform. However, of primary importance to this discussion are the significant numbers of participants generating substantial amounts of course-related material. This created a compound effect, in which the more responses participants created, the more material was supplemented to the course content. This body of information rapidly became too immense for any single participant of the EDCMOOC to digest within the specified schedule and duration of the course. This was acknowledged by the teaching team in the course guidance, with students advised and encouraged to independently select content that was relevant or interesting to them.

Although the intention was for participants to respond to each other's work, no formal guidelines for the formation of groups were provided. As explored below, this proved to be a significant decision, primarily because it retained large numbers of participants in all aspects of the course activity and permitted all student-created material to be part of the main body of course content.

These aspects of the EDCMOOC design invited a particular kind of massiveness; one that is atypical, but also provides a noteworthy case for considerations of what happens when education involves large student numbers. The next sections discuss ways in which the participants of the EDCMOOC, alongside engaging in the specified activities of the course, began to respond to the experience of being involved in the course itself. Although often related to course themes, such responses surfaced as abstracted interpretations of the phenomena of MOOC participation. These meta-commentaries are discussed in two broad categories: reactions to the experience of large numbers and the offering of solutions to manage the massiveness of the MOOC.

I suggest that these responses are of significant interest due to indications about the backgrounds and experience of EDCMOOC participants. In the pre-course survey, 86% of respondents indicated that their highest level of completed academic study was at either undergraduate or postgraduate level, while 51% indicated that

they were employed in teaching and education. This suggests that a large proportion of the EDCMOOC participants may have had significant prior understanding and experience with the course topics and themes. It may also indicate ingrained expectations, or at least convictions, about how education should take place. Of the respondents in the pre-launch survey, 69.2% indicated that the EDCMOOC was the first MOOC that they had enrolled in; and 90% of evaluation survey respondents indicated engagement with the course in order to experience a MOOC. Combined with the indications of professional status, this could suggest that a significant proportion of EDCMOOC participants were active in order to form an understanding of MOOCs in general, rather than the specific course content. This also may explain the widespread meta-commentary on the experience of MOOC participation. In these ways, the following reactions and solutions to the massiveness of the EDCMOOC may serve as a useful insight into the range of understandings, perspectives, and approaches of established education professionals entering the emerging domain of the MOOC.

Reactions to the massive

The massiveness of the EDCMOOC was frequently perceived negatively. One of the most common reactions was the notion of being "overwhelmed." The terms *overwhelming* or *overwhelmed* appeared 62 times in the Coursera discussion forum referring to participation in the EDCMOOC, and surfaced 52 times in the post-course evaluation survey in comments about the experience. The widespread use of this term is significant because it alludes to an anxiety about how the individual learner is positioned in relation to an external and superior force; something too large to comprehend or control. In this sense, the massiveness of the EDCMOOC appeared to represent an external threat to both the individual and the expectation of organisation and discipline in the educational setting. The Coursera forum and evaluation survey revealed a rich set of responses about the experience of participating in the EDCMOOC, which are categorised here into four broad and interrelated themes: metaphors of water, a sense of loss, overload, and noise.

Metaphors involving large volumes of water were particularly prevalent in the discussion forum during the course, and present an intriguing vision of massiveness in spatial and material terms. One participant suggested that "the course feels like an ocean so I'm making myself post this comment as a way of dipping one toe into the water." Another stated "this course was a waterfall, and I only felt a few drops," expressing an additional sense of loss at being unable to interact with all the material. These metaphors express a profound anxiety about the large volume of activity and information in the EDCMOOC, yet they also reveal how this concern is related to individual orientation and presence with in the course. One poster suggested being "overwhelmed about how I find my niche and voice in this huge ocean of information." The ocean serves to indicate both vastness and unfamiliarity here; an alien environment which the embodied individual is ill-equipped to navigate. Comments in the evaluation survey were similar, with one contributor claiming, "I felt my input would be lost in the sea of discussions." Another participant expressed the ocean metaphor in more threatening terms with the suggestion that "the MOOC comes at you like a tsumani & simply swamps you."

This sense of loss in relation to the vast and distributed discussions of the EDCMOOC was palpable in many comments. One participant suggested, "there are

just too many discussions happening, too many opportunities to miss key postings and threads. I felt I was always failing to keep up or get from the course what I wanted to." Another added, "discussion and interaction was spread over too many systems/mechanisms, making it impossible to know what you might be missing." This sense of failing to monitor or oversee all aspects of the course was often linked to the pace and weekly scheduling of topics, such as "once I slipped behind with the week's material it was impossible to get back in line due to the volume of discussions." Another participant claimed, "the discussion forums exploded on weeks 1 and 2 and as a result were virtually unusable if you were even a day 'late to the party' I felt." These sentiments may be related to the status and work-related commitments of participants suggested previously. This idea of escaping content was articulated succinctly in a forum comment, describing participation as "the feeling of a runaway train." Many of these comments also made notable references to issues of identity. One contributor summed up the experience with, "just felt big, lost, and just a number," significantly linking the sense of loss with a disorientation and devaluing of the self. Therefore, the feeling of loss was not just expressed in relation to the idea of missing key course material, but also with regard to how participants perceived their own position and presence within the course.

Notions of "overload" in the evaluation survey often referred to the distribution and magnitude of discussions and resources. One commenter suggested, "I found myself overwhelmed with the pace of the course and the amount of new information thrown out there about websites, resources, platforms. I just did not know which one to follow." Another stated, "I also felt overwhelmed and confused about all the different ways I could engage and suffered techno-overload trying to look at and read all the different media streams and such." These observations reveal a significant concern about the perceived importance of course content. This frustration was apparent in the comment "it was overwhelming, how many social sites were involved, it felt like there was no way to fully interact in the course." Despite guidance to be selective and self-directing in engaging with course material, many students had clear expectations about the need to absorb and participate in all that was on offer.

Student-created material was often considered excessive or superfluous. One commenter claimed, "it felt at times like the course was generating a lot of online pollution. At times the volume of online content created felt a lot like landfill." The perceived worth of student contributions was frequently devalued in a similar way, attributed to a magnitude of activity often labelled as "noise."

One participant claimed, "the volume of comments and postings became noise and interfered with my learning," while another suggested "the 'noise' from all the students who wanted to shout their opinion (sometimes without listening the previous comments) was unbearable." This sense of fragmentation and lack of cooperation was described elsewhere in terms of violence: "This was not a community – more like a cluster bomb. Comments felt like missiles shot at random by the individual posters."

These themes indicate that many students come to such courses with expectations about content and participation that are sometimes neglected in the literature and promotion of MOOCs (Ross, Sinclair, Knox, Bayne, & Macleod, 2014). Rather than automatically manifesting a "learner-centred" environment, MOOCs can provoke anxiety about presence and orientation in relation to large-scale activity (Kop, Fournier, & Mak, 2011) and a sense of losing identity and individuality. Many

students also maintain the expectation that all content needs to be accessed in order to authentically experience a MOOC course. It also seems apparent that a significant proportion of students value centralised, institutionally endorsed content and are not necessarily willing to value peer contributions. These somewhat contradictory outcomes seem to counter what can be perceived as a naturalising of the ability to self-direct, independently discern effective connections, and seek support and endorsement from peers rather than teachers, encountered in some of the connectivist informed literature (Anderson & Dron, 2011; McAuley, Stewart, Siemens, & Cormier, 2010).

Visual work produced during the EDCMOOC image competition also expressed notable reactions to the experience of "massive education." A particularly striking example was *All Lines are Open* by Mullu Lumbreras, which took the form of a remixed Tokyo underground map (see Lumbreras 2013). In this image stations are augmented with social media icons and further images from the competition, creating a dense and hectic diagram of connections and potential journeys. Like the underground map it references, the EDCMOOC is envisioned as a site of complex mobility necessitated by the movements and activities of a concentrated population. Notable are the frequent 'You are here' signs, suggesting multiple and distributed positions of engagement and interaction, and perhaps a lack of bearings or direction. Significant to this discussion is a prominent stick figure in the bottom right of the image, which might be interpreted as adopting an exasperated posture and expression. As in the metaphors of the ocean discussed previously, the sense of chaos and confusion brought about by the movements of the MOOC are positioned as an external non-human force, outside of the helpless and vulnerable learning subject.

Anxiety about the orientation of the individual was also a key theme of *Rabbithole* by June.B (2013), which depicts a humanoid avatar appearing to float amongst a complex space of symbols and abstract forms. The figure of the human is central in this image, yet its balance and poise appear to be at stake within a fluid and shifting environment peppered with social media icons. The loss of control and direction is palpable in *Rabbithole*, and the stance of the avatar is mirrored by an image from *Alice's Adventures in Wonderland* by Lewis Carroll (2008), a tale of surreal adventures and confusing spaces.

The image provides a useful way of considering how the MOOC environment can disorientate learners who may be expecting the orderly setting of the classroom or lecture hall. Both *All Lines are Open* and *Rabbithole* offer intriguing ways to conceptualise the MOOC experience: as the movement of people and the managing of crowds or as an immense, perplexing and unnavigable terrain. In these configurations, the position and status of the individual appears to be at risk. Nevertheless, *Rabbithole* offers an alternative reading of what happens when the perception of educational space is disrupted: the individual is conceived, not as the exacerbated onlooker, but as reconstituted within the digital; as part of the fluid and shifting spatial order.

Solutions to the massive

Proposed solutions to the massive of the EDCMOOC tended to reflect the tensions between instructionist and constructivist (or connectivist) pedagogy, and assumptions about the xMOOC and cMOOC formats, respectively. As Stewart (2013) aptly pointed out, this dualistic tension is entangled with the dominant ways that

technology is perceived in education: as a means to access information or afford communication. The former interprets the role of education technology as providing more accessible and egalitarian ways for students to come into contact with already existing knowledge, while the latter emphasises the means for interaction and the construction of knowledge through dialogue. Both these views perceive technology in instrumentalist terms, as the neutral and invisible means to achieving educational goals (Friesen & Hamilton, 2010). Furthermore, they directly influence the way that the massiveness of the MOOC is perceived: either as the scaled broadcast of an identical lecture to a large audience or as the potential for more communication and social interaction with a larger group of peers. In these ways, established ideas about pedagogy and technology are reinforcing a dualistic interpretation of MOOCs; as either the efficient transmission of authentic academic knowledge or the building of networked communities that challenge established institutional organisations. As suggested below, solutions to MOOC pedagogy informed by both positions tended to propose practices that actually reduced the massiveness of the EDCMOOC.

Of those comments which appeared to be critical of distributed course space and massive participant activity, a significant proportion specified a solution that involved the reduction of students, the diminishing of content, and the re-assertion of teacher authority. A particularly salient contribution to the forums sums this up with, "I am searching for some simplicity. Week One: Topic One: One Video, One Reading, One quiz, One discussion thread on Week One Topics." Here, the distributed arrangements of the course are considered to create unnecessary complexity, and reveal the strong desire for a centralised, logical, and linear pathway through the course material. This suggestion exemplifies the call for a singular, and hence scalable, educational experience. This call for simplicity is not just about individual preference; rather it is expressing the idea of education as a set of activities that can be replicated so that each student gains an identical experience. In this way, the move to reduce course content and activity can also be perceived as a move to standardise and abstract learning outcomes. Rather than being the emergent product of specific, concrete, and temporal interaction with the course, learning outcomes and student experience become predefined, identical, and universal. General critiques of standardisation in education are often expressed in terms of resistance to nationally imposed measures; as standards which stifle individual teaching strengths (e.g., Giroux, 2010). Given the international scope of MOOCs, continued research may need to explore the extent to which massive enrolments might reduce the diversity of instruction in particular disciplines.

Calls for direction and guidance were also frequent. The very first student-created forum thread was titled "Where are the professors?" in which the participant suggested:

> Somehow I feel like doing this all on my own without any assistance or guidance from professors and being really "in" the course … I think I could do this any time on my own, but where is the guideline, where is my teacher?

Significantly, this student claimed to be capable of independent study, yet he/she still appeared to covet some level of support, lest his/her position within the course were placed in doubt. Teacher presence was further privileged in the comment, "I would really suggest this course should include some teaching next time. The only reason I came to this course … is because I was looking forward to learning from the great teachers at Edinburgh!" Another commenter re-asserted the authority of the MOOC

teacher suggesting, "I would far prefer to hear from you instructors who are in a much better position to expose me to current digital culture." The desire for instruction thus reflects the calls for simplicity and reduction, in which the singular presence of the tutor replaces and conceals the cacophony of distributed peer interaction. The figure of the instructor or professor is thus often considered indispensable, calling into question MOOC designs that too quickly assume the teacher to be merely "a fellow node" in the network (Anderson & Dron, 2011, p. 90), or even a role that is increasingly obsolete (Kop & Hill, 2008).

However, in contrast to such sentiments, many participants expressed a resistance to the authority of the teacher. Another commenter in this thread contended, "Who needs professors? The majority of the students in this course are capable enough to guide participants through the course. We call this social constructivism." However, significantly, those endorsing this position often appeared to replace the need for a teacher with the necessity for community. This idea of community feedback as a direct substitute for the instructor was expressed by one forum contributor as, "although a MOOC is massive if the people have an understanding that the culture of community is important then you will not have the sense that people are waiting in the classroom with their hands up." What is significant here is the importance granted to the individual, as part of the ethos of community. The anxiety of the individual not being answered is perceived as the fundamental problem, for which the community provides the service of feedback. Further participants contributed to the naturalisation of community as an essential requirement for learning, expressed by one participant as follows:

> People will connect to a community and learn but there has to be a community … you should strongly think of breaking MOOCs up into smaller learning communities where people can know each other … I think maybe 24 to 36 people in each "tribe" would be good.

Another forum participant related this directly to educational theory, suggesting "the 'massiveness' is real obstacle to interaction and constructivism practices," making a firm distinction between massive participation and the structured relationships of dialogue required for producing knowledge in the constructivist paradigm.

One of the most prominent suggestions in the EDCMOOC was thus, perhaps unsurprisingly, for the grouping of students. In a thread entitled "Lost in forums" one participant asked, "Don't we need to be marshalled into moderate size groups, otherwise the number of inputs is overwhelming?" Another commenter suggested, "I am really enjoying this course, but I think that it is important to acknowledge that it is better to have a reduced size classroom than a MASSIVE one." Many participants made use of the distributed social media spaces to draft guides and strategies for group formation, and these were particularly prevalent in the Facebook and Google + spaces. One such compendium suggested, "provide a place for cadres to form," and "engage more tech savvy folks to lead cadres" (Anonymous, 2013). The tactical premise is striking here, with the activist language reflecting the self-organising premise of the connectivist MOOCs (McAuley et al., 2010). Of significance is the systematising of the community here, in which fringe participants are trained by more authoritative figures. This serves as a salient example of the different ways community participation can be interpreted; in this case, alluding to normalisation and hegemony (Ferreday & Hodgson, 2008; Gulati, 2008). Many students formed small groups, some adopting "quadblogging" activities in which

posting and commenting duties were shared amongst four participants, while others contributed to the course alongside work colleagues (e.g., Dale, 2013; Young, 2013). Nationality and language provided strong motivators for creating sub-groups, with approximately 25 location-based groups identified from Coursera forum posts and Facebook activity. Such group formation was often accompanied with the justification that community can only function with an optimal size. As one commenter put it, "drop the M and just call then RSOOCS (reasonably sized …)."

Conclusions

Reactions and solutions to the massive of the EDCMOOC revealed a profusion of suggestions, expectations, and convictions about MOOC education. The selective examples in this article expose only a fraction of the meta-commentary about this emerging educational format, an intensity of debate that is itself significant given the relatively early stages of the MOOC. Firstly, many students responded to massive participation in ways that can be interpreted as overload, anxiety, and a sense of loss. The massiveness of the MOOC appeared to be something alien to their expectations and understandings of educational activity and practice. Secondly, these responses habitually reinforced an emerging opposition in MOOCs: that between an instructionist form which privileges transmissive pedagogy and centralised, institutionally authenticated knowledge and a constructivist or connectivist form which emphasises the production of knowledge through community interaction or network formation. These oppositional strands are reinforced by the popular designations xMOOC and cMOOC and underpinned by instrumentalist views of technology either as enabling access to information or increasing opportunities for communication. The significant number of professional educators participating in the EDCMOOC raises the question of whether such a bifurcation is a matter of student expectation or the influence of educational theory and teacher conviction. Nevertheless, more work is needed within the open educational movement to consider how to work with a global audience that has significantly different experiences and beliefs about education; deep-seated expectations which are often brought to bear on ensuing MOOC activity (Ross et al., 2014).

This article suggests that the instructionist, constructivist, and connectivist positions tend to adopt practices which work to reduce or immunise what may be the one characteristic of the MOOC that is genuinely new to education: massive participation. This conclusion is not to claim that the EDCMOOC design should serve as a model for subsequent MOOCs or to imply that the massiveness it generated is universally and unquestionfully of value to education, but merely to suggest that its novelty offers an alternative way to think about this emerging domain. Both the scaling of a singular educational experience to thousands of participants and the formation of community groups and personal learning networks are of pedagogical worth; yet, they share an interest in structuring and rationalising the diversities and inconsistencies of massive and globalised activity. The importance of this conclusion is that the very development or "maturing of the MOOC" (Haggard, 2013) may rush past this very moment in which something unprecedented and radical might be perceived. SPOCs, or small and private online courses, have been described as an "almost inevitable evolution" of the MOOC (Coughlan, 2013), while the COOC has been suggested to "replace the Massive with the Community" (Shukie, 2013). Obsessions with acronyms aside, these projects demonstrate immunisation at work.

Both these proposals position the community as a way of isolating educational activity from an external world imbued with threats and liabilities. It is an attempt to position education as a transcendent, sterilised activity disconnected from the contaminations and disputes of the populace.

In order to further explore the massive of the MOOC, educational theory might engage with work that considers the increasingly connected and globalised population. Hardt and Negri's (2004) concept of the "multitude" provides a theory of a complex and irreducible population, which achieves commonality through difference rather than similarity. Where "the people" have been used to suggest a single identity and "the masses" used to imply uniformity, Hardt and Negri proposed the "multitude" as way of theorising plurality:

> The multitude is composed of innumerable internal differences that can never be reduced to a unity or a single identity – different cultures, races, ethnicities, genders and sexual orientations; different forms of labor; different ways of living; different views of the world; and different desires. (p. xiv)

This acknowledgement of irreducible difference may be valuable for educational projects that seek global participation and massive enrolment numbers. Considering "students" to be a stable and universal category with innate abilities and behaviours masks the variations, clashes, and conflicts that make MOOC populations rich, diverse, and intense. While emerging research is attempting to categorise student involvement (e.g., Ho et al., 2014; Milligan, Littlejohn, & Margaryan, 2013), this may serve to standardise participation rather than engage with the complexities of diverse and context-dependent course interactions.

Whether in the form of the scaled, identical educational broadcast or the construction of an orderly, self-centred personal learning network, MOOCs are frequently designed to rationalise and regulate massive participation into the recognisable guise of the university lecture or the cohesive community. It is in this way that both xMOOC and cMOOC approaches maintain educational orthodoxies by preserving individualism, reason, and autonomy, and excising animality, irrationality, and the *other* (Lewis & Kahn, 2010). The massive of the EDCMOOC may have offered a glimpse of this excess; a radical outside to education beyond the rational common sense of individualism and self-interest. As education begins to sense global participation, what may be truly revolutionary and disruptive lies not in what the MOOC can do for the progress and betterment of the individual, but rather what the massive can do for education. As Lane and Kinser (2012) suggested, a "multinational university can't simply be a broadcasting service to recipients in other countries; it must engage with and learn from other cultures." One way to learn from the massiveness of the MOOC might be to conceive of education beyond the exclusive interest in individual attainment, and to work with the massive rather than against it.

Acknowledgements

Notes on contributor

Jeremy Knox is a PhD student in the Moray House School of Education at the University of Edinburgh, and a member of the *E-learning and Digital Cultures* MOOC teaching team. His research concerns relationships between critical posthumanism, new materialism, and the open education movement.

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