

MOOCs, openness and changing educator practices: an Activity Theory case study

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Abstract

The practices and perceptions of educators formed through the creation and running of a Massive Open Online Course (MOOC) provide a case study of how educators understandings of ‘openness’ change (Beetham et al 2012, p 3). We are interested in how educators engage with open education resources (OER) and openness as part of developing open online courses, and how this informs their practices and attitudes afterwards. Deepening understandings of these changes is important for informing strategies involving helping educators in adopting productive open educational practices. Our research question is how do educators’ practices change or not change when using - or not using - OER in and as a MOOC? We are interested in whether and why educators adopt open practices in their MOOCs. We employ an Activity Theory (AT) conceptual framework as a heuristic tool to track and thickly describe educators’ practices and perceptions. This frame enables us to locate educators’ practices - in a context of mediating nodes, i.e., tools/artefacts, rules, divisions of labour, and community – as they strive towards and consider their object. The object upon which the educators act is the development of a new interdisciplinary field. We focus on the role of two mediating artefacts introduced into the activity system, namely Creative Commons (CC) licenses and the ‘MOOC design’. We describe how the open aspect of these artefacts mediate and affect educator’s perceptions, attitudes and educational practices in the context of their object-directed activity system. We draw predominantly on semi-structured interviews with the MOOC lead educators and the MOOC learning designers. Interviews were conducted at two time intervals, before and after the MOOC has run. From this we craft two activity systems. We have categorised our findings according to Beetham et al’s dimensions of open practices. Further, two broad themes emerged from the data analysis. These are Affordances of the MOOC and Reflection on educational practices.

Keywords

Activity Theory, practices, change, higher education, MOOCs, OER, openness

Introduction

The relationship between openness and MOOCs is an ambiguous one. Recent research has contended that while the pedagogical design of MOOCs may have been informed by ideas from the Open Education Resources Movement (OERM), MOOCs may not be very open in practice (Ozturk, 2015). Clark identifies at least eight types of MOOC, with openness not a commonality between them (Clark, 2013). Educators who make MOOCs, research suggests, are divided roughly into two camps: those who see MOOCs as embodying the potential to democratise and widen access to education (the altruists) and those who see MOOCs as poorer versions of face-to-face learning and attempts to privatise learning and market institutions (the cynics) (Evans & Myrick, 2015). There is little research however, which looks specifically at the practices of MOOC educators in the Global South – and whether/ and in what ways these practices become more open - after the process of creating a MOOC. This is our interest.

Global South institutions are low producers of open education resources (OER) and participate relatively minimally in open education learning. Institutions and academics in the Global South are increasingly

considering the affordances and benefits of participating in open education. In this context, our interest is in whether and in what ways engagement with MOOCs and OER in African-developed MOOCs contributes to educators' open educational practices. This paper reports on one aspect of a broader investigation across four MOOCs looking at educators' practices as regards openness. We track educators who adopt OER in and as MOOCs and report on their attitudes and assumptions towards using OER and investigate whether educators adopt OER in MOOCs and when they do whether they subsequently exhibit greater openness in their teaching and learning practices. We draw on Beetham et al (2012) to describe openness as involving broad open education practices and/or open content (Beetham, Falconer, McGill, & Littlejohn, 2012).

The study examines ways educators' practices change, after the process of creating and teaching their first MOOC. The MOOC is a six week course hosted on the FutureLearn platform. The MOOC 'Medicine and the Arts: Humanising Healthcare' as interdisciplinary course, combining insights from the Arts and Humanities to enrich healthcare from a Global South perspective. The objective of the MOOC, from the lead educators' perspective, is to develop the interdisciplinary field of Medical Humanities in particular to give perspectives from the Global South. The process of making the MOOC involved two principal sets of actors: the two MOOC lead educators (LE1 and LE2) and the MOOC design team, as well as a further, 17 guest educators from a range of Arts and Humanities disciplines. 14 of these educators were interviewed (AP, HM, ML and PD). The lead educators and the MOOC design team met frequently during the process, deciding collaboratively on what content to use, the structure and design of the course, the type of licenses under which the content is licensed, how to construct tasks and assignments etc. The process was iterative, recursive and collaborative, involving an interplay and negotiation between the lead educators and the MOOC design team. This process of making the MOOC began in late 2014 and the MOOC was launched in early 2015 with 8000+ participants enrolled for the first run.

Methodology

An semi- ethnographic approach is followed to research changes in terms of openness in the lead educators' practices. One of the researchers (MG) functioned as an embedded observer; he participated in the weekly MOOC planning meetings, and generally observed the process of making the MOOC. Two of the other researchers (AD and SW) formed part of the MOOC design team. In order to track educators' practices during and after the creation of a MOOC, semi-structured interview questions were constructed. The interview questions were developed to elicit responses relatable to Beetham et al's six indicative features of open practices. Activity Theory (AT) was used as a conceptual framework to show how individual decisions are contextually-influenced and shaped. The lead educators were interviewed at two time intervals, just before the MOOC was launched and a week after the MOOC concluded its six week run. In addition to the lead educators, 16 guest educators from the MOOC were interviewed before the MOOC, while six were interviewed afterwards. The same questions were asked before and after the MOOC had run its course in order to track any differences in their thoughts, perceptions and practices. Further a reflection session after the MOOC, which involved the MOOC design team and the lead educators was recorded and transcribed. In the reflection sessions the design team provided learning and data analytics on the course, and the lead educators then reflected on and discussed their experiences. The interview and reflection data was coded using NVivo 1, with the codes shaped by the AT framework and Beetham et al's open practice features , as well as by themes which emerged from the interviews.

Conceptual framework and literature review

This study adopts Engeström's (1987) Activity Theory lens as a tool for describing human activity (or activity systems) and is premised on the idea that human activities are poorly understood when viewed as distinct from their context. In Activity Theory, the subject's motivation and drive towards an object is not exclusively internal (subjective) (Kuutti, 1996). Rather, motivation and the relation between the subject and the object is mediated by artefacts or nodes in the activity system (i.e., tools/mediating artefacts, rules, the community, and a division of labour). In this way the individual's acts and mental processes are embedded within a social context. Activity systems are object-directed systems and are distinguishable because each activity system has a discrete object (Kuutti, 1996). The unit of analysis in Activity Theory is the object-directed activity.

In this view, human practices cannot be separated from their contexts (or the mediating artefacts in activity systems). As Nardi observes "what takes place in an activity system... is the context" so that "context is not just 'out there' " (Nardi, 1996, p 38). Although separated analytically, in Activity Theory the external (rules, community, tools/mediating artefacts, division of labour) and the internal (the subject's mind and motivation) are merged together. There is no sharp discontinuity between the subject's practices (which are object-

motivated) and the mediating artefacts; these elements of an activity system are ineluctably entwined. When subjects act towards and consider an object, their acts and motivations are always mediated and dynamically influenced by artefacts. To examine educators' practices, therefore, these practices are situated in activity systems.

This study constructs two activity systems, one before the MOOC is running but has been designed and one after the MOOC has run and completed. This research is an investigation into the perspectives and experiences of educators in the MOOC; it examines whether and how they adopt and grapple with OER in the course of building the MOOC. Our data collection consists of open-ended individual semi-structured interviews and a post-course reflective discussion with the lead educators in the MOOC. Interviews enabled us to insert educators' subjectivity into our descriptive investigation and get at their motivations for the object and their perceptions of and relations to mediating artefacts. The object of an activity system is the motivation for its existence, and since the subject's motivation "drives" the activity, interviews are a suitable tool for "unpacking motives" (Hardman, 2005, p 4). In order to locate change or opportunities for change in educators' practices, we looked for manifestations of contradictions and affordances which emerged in the activity systems. We examined what contradictions or tensions emanate in incorporating or resisting OER in the MOOC and what effect this has on their beliefs, attitudes, assumptions and practices. The Activity Theory lens allows us to illustrate activity systems at two time intervals.

The activity system model enables rich descriptions of educators' practices while engaging with the MOOC design process and OER as mediating artefacts entering into their activity systems. Bellamy has noted that new artefacts (like tools) in an activity affect the kinds of social and individual processes which develop, but also that existing social processes in a community and the mental processes of an individual in an activity affects how a new artefact/tool is used (1996, p 125). In our view the 'MOOC design' is a mediating artefact in the activity system. By MOOC design we signify both the design of the MOOC, which includes the learning design aspect, and the MOOC platform characteristics. The term 'MOOC design' as a mediating artefact in the activity system refers to the design and production aspect of the MOOC as well as the MOOC platform's characteristics, incorporating the technological features of the MOOC platform. The MOOC design is the first of two mediating artefacts which enter the educator's activity system. The second mediating artefact is the set of Creative Commons (CC) licenses. We understand CC licenses to be mediating artefacts which signal to users how property right rules structure relationships with an educational resource, through the enabling permissions which transform a learning resource into an OER. A MOOC, despite its name, is thus not necessarily 'open' by default in the sense of consisting of OER, but can be if its contents are openly licensed and hosted which is a precondition for the resource to be legally remixed, revised and/or reused. If the MOOC contents are not retrievable after the MOOC has run its six week course, then the MOOC is a time-contingent OER, or an OER only when the course is running on the MOOC hosting platform.

The activity theory lens offers a powerful explanatory device for describing and understanding the effects of new mediating artefacts (CC licenses and the MOOC design) entering the lead educator's activity systems and as well as their conceptions of the mediating artefacts. Activity theory also provides a way of describing how practices are dynamically influenced and mediated over time, before and after the MOOC. Evidence of contradictions emerging in particular show how practices may change or how innovation may come about. As to understanding open practices, we use Beetham et al's six features of open practices to conceptualise indicative open practices, these six features (with shorthand titles in brackets) are as follows: Opening up to students not on campus/formally enrolled (Opening up); Sharing and collaborating on content with other practitioners (share and collaborate); Re-using content in teaching contexts (re-use); Using or encouraging others to use open content (encouraging others); Making knowledge publicly accessible (publicly accessible); and Teaching and learning in open contexts

We interpreted each of Beetham et al's features of open practices as existing along a continuum. Seeing the features on a continuum is distinct from seeing the features as either/or dichotomies, where for example the educator is unambiguously either making knowledge publicly accessible or not. For instance an educator who shifted from being indifferent or uninterested in making knowledge publicly accessible to expressing a desire to do so after engaging with OER in the MOOC is significant, even if no concrete examples of making knowledge accessible are forthcoming.

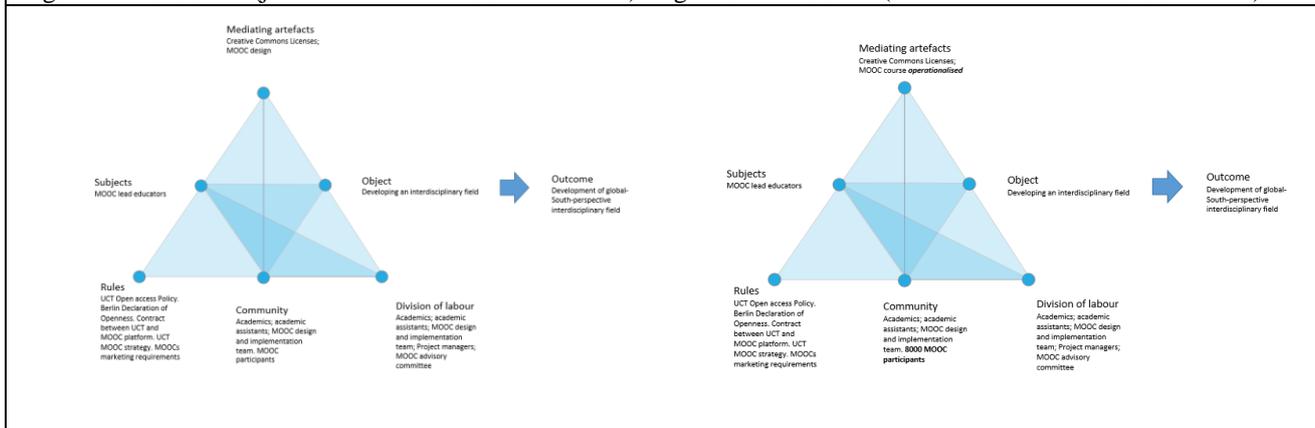
Studies have examined contradictions in relation to new technology/mediating artefact use in education and a number have examined changes in educators' practices by describing their practices as activity systems and locating contradictions in these systems (Hardman, J, 2005; Murphy, E & Rodriguez-Manzanares, M., 2008; Peruski, L & Mishra, P, 2004) Related studies were all interested in change and innovation in activity systems using them to find instances of where contradictions were recognised or resolved (Barab, Barnett, Yamagata-Lynch, Squire, & Keating, 2002; Dippe, 2006; Murphy & Rodriguez-Manzanares, 2014; Nelson & Kim, 2001).

Like Peruski and Mishra (2004), we are interested in how the experience of engaging in new forms of online teaching affects how educators think about their conventional education practices. Murphy and Rodriguez-Manzanares' (2008) study was helpful as it examined changes in distance education teachers' practices showing how disturbances emerged when educators' transitioned to virtual distributed classrooms thus shifting educational practices from a centralised control model to distributed engagement. Thus an examination of contradictions can help to understand how innovation occurs. Particularly useful was a study which usefully employed AT to richly describe how faculty and instructors implement OER to support teaching and learning needs within higher education institutions, although was a snapshot rather than longitudinal as ours is (Porter, 2013).

Findings

As we were interested in changes in educators' practices over time, we interviewed the educators in the development stage, before the MOOCs ran, and immediately afterwards. These two stages are represented in two Activity Systems. In the first Activity System (AS) Figure 2 below, the subjects (the Lead Educators) acting upon and consideration of the object is mediated by a multiplicity of factors, which are categorised into nodes in the Activity System. The nodes of the system dynamically influence the subjects. For instance the subjects' creation of the MOOC (in order to develop their interdisciplinary field) is inter alia a function of the rules (e.g., supportive open environment, the university's MOOC strategy) and the division of labour (e.g., MOOC design team, MOOC advisory committee). As one of the lead educators remarked, "I was just one small cog in the wheel" (LE1). Importantly, both the 'MOOC design' and its OER components – which are mediating artefacts – had not been released as a course were inoperative at this point in time, and the MOOC course would only go live the following week. In the first AS the lead educator had a nascent experience of the MOOC design and its OER component's affordances. Fig. 2 shows how the mediating artefact node interacts with the lead educators' object- the development of a new interdisciplinary field- and in doing so provides the possibility to understand the role of openness through the affordances the mediating artefacts provide. The mediating artefact nodes also dynamically creates occasion for educators to reflect on their own practices.

Figure 2: MOOC 1A (just before the MOOC is launched) Figure 3: MOOC 1B (one week after the MOOC is over)



There are two significant differences between the first and second activity systems. In Figure 2 the MOOC design and its OER components have been operationalised, that is the MOOC course has been taken by a cohort of learners and has run its six week duration. This implies, secondly, that thousands of new participants (MOOC learners) from a global arena have entered the community node of the activity system. As described below, these two changes cause the lead educator's perceptions of MOOCs and open access educational resources to change. We examine where and how these changed perceptions might lead to change.

The findings which have emerged through analysis of the two activity systems are arranged into three broad themes, namely, a) Dimensions of open practice, b) Affordances of the MOOC, and c) Reflection on educational practices. The exploration of these enables us to investigate and describe the ways in which educators engage with opportunities to create OER in a MOOC and how this affects their educational practices and perceptions. In order to examine any shifts or changes from the first activity system to the second, we describe the findings from both activity systems

Dimensions of open practice (Figure 2)

Opening up

LE2 noted that s/he “subscribed” to the idea that “knowledge should be shared as far and as widely as possible” and that a MOOC was one means of doing that. LE2 was also interested in not having to repeatedly express ideas and that referring people to a URL could help with disseminating ideas. While not having her/his learning materials publicly available, the educator saw that disseminating ideas is “really an important part of the way we teach”. Further, one lead educator was hopeful that since the MOOC does not stipulate entry requirements, i.e., allows open enrolment, power dynamics between learners and educators might dissolve and the MOOC could act as a “sort of levelling platform” and generate a new kind of advantageous learning context (LE2). Likewise LE1 considered it important to move the development of their field “outside the confines of UCT to a global arena” and further “open up new conversations”. LE1 saw the MOOC’s openness as representing “huge potential” in this respect. The interviews showed educators perceived the MOOC’s openness as beneficial because they provided access to educational resources and knowledge which is ordinarily “all nicely packaged into tertiary institutions and never goes anywhere” (ML). One suggested MOOCs could even serve as “social responsiveness” to communities and the continent by offering access to anyone who wanted to access it (ML). Similarly, the MOOC was considered beneficial because it provided learners with access to academics who they would otherwise not ordinarily have access to. In large part the educators considered the access and reach aspect of the MOOC particularly positive. The connotations of openness were therefore to do with social engagement, access, reach beyond the confines of the traditional university community.

Dimensions of open practices (Figure 3)

Publicly Accessible

LE2 also considered that making knowledge publicly accessible permitted one to reach a far wider audience and so was “probably far more effective” than “even...the biggest conferences” and affirmed the view that “knowledge shouldn’t be for the elite few it should be for everybody who wants to engage with it.” So that the public accessibility of the course was considered effective in the development of the interdisciplinary field.

Reusing content

LE2 remarked that it would be “great” if other educators were to reuse her/his MOOC content and saw this as a key part of openness: “I mean that’s part of the open content stuff”. LE1 considered that reuse of the MOOC contents was “hugely beneficial” in that it could “generate new interdisciplinary research projects”, that it could be used as a “springboard for classroom teaching” and pique the interest of undergraduate students. Educator PD argued that reusing open resources in teaching could avoid replicating valuable work and free up time to prepare to teach other aspects of the field. Having engaged OER in the construction of the MOOC, the educator came to see the value in reusing teaching resources as a means to save time.

Teaching and learning in open networks

In terms of teaching and learning there was a clear sense in which the lead educators perceived benefits to teaching and learning in an open network.

The lead educator came to believe that there existed “the potential of deep learning online” which “turned” the educator’s notion of online open learning “around quite a lot” (LE2). Further, given that anyone could access the course, that it was open, saw that the perspectives others brought in discussions on the course “enhanced” what the lead educators had put in the course and that this in turn made the learning context “a lot more flat, a lot more egalitarian” which the educator thought was “great” (LE2). Aligned to this, the educator saw it as a benefit that the ideas presented in the course were reflected on in a “diversity of contexts”. The educator was also “positively surprised” at the engagement of the participants. As to the openness of the MOOC - in terms of its wide reach, accessibility, lack of entry requirements – the educators noticed a range of benefits. They were impressed by the personal and “intellectual synergies” which the MOOC enabled because of its global reach (LE1). Teaching in a open network also proved a diverse learning environment which “you cannot achieve in university classroom setting” (LE1). This educator also noted that with requisite support s/he would “definitely” be keen to make another MOOC.

LE2 described the process of teaching virtually via the MOOC as transforming his view of his role as educator so that s/he “felt more and more like a learner and less and less like a teacher” and further that s/he was “learning as much from people’s comments as anybody else”. This implies a transformation in how the educator perceives the value of learning and teaching in open networks. For LE2 the most positive aspect of the MOOC was its accompanying community of participants which saw that the course was received and reflected upon in a very wide diversity of contexts, which a university setting struggles to achieve. The lead educator therefore came to perceive value and potential in open learning and teaching.

Two further themes emerged from the interviews, Affordances of the MOOC and Reflection on educational practices:

Affordances of the MOOC (Figure 2)

During the MOOC design process and before the MOOC launched, the lead educators (subjects) were hopeful about the potential affordances the MOOC might yield, and believed that the MOOC (as a feature of the MOOC design) would be “one step in the right direction” (LE1) and could build “critical mass thinking” (LE1) about their new interdisciplinary field. For LE2 the MOOC’s accessibility represented an “opportunity” to “find new collaborations around the world”. As one of the lead educators reasoned “unless you put something out there you’re not going to create new links” (LE2). For LE1 the creation of the MOOC constituted a tangible “archive of an idea” which s/he could use to develop their interdisciplinary field.

Affordances of the MOOC (Figure 3)

The experience of teaching and observing how students responded in the MOOC resulted in the educators expressing more varied and nuanced understandings of what the MOOC enabled. One educator noticed that the MOOC fostered learning which s/he described as “bi-directional” with “many people offering useful readings, links, poetry, Youtube clips etc.” (HM). This relates to an opportunity to build up an “archive of an idea”, which the lead educators had hoped the MOOC would facilitate. As participants engaged with the course and educational resources, and discussed ideas on the platform, one lead educator noticed that the ‘archive’ “kind of builds itself up” (LE1). This lead educator remarked on the “profundity of the space” for fostering a wide community, and saw it as something that one “cannot achieve in a university classroom” (LE1). The educators were surprised by the “depth of engagement” from the participants, and one lead educator noted that if s/he “could get that level of engagement from all my students it would be amazing” (LE2). The other lead educator remarked that the MOOC was able to “tap into deep reservoirs of people’s interests” in the new field (LE1). Another educator noticed that the responses were “very much akin” to the responses s/he received from conventional students and that there was certainly evidence of “thinking in the mode that a university expects” (AP).

In summary, the academics felt that the MOOC changed the relationship between educators and students, and that participants were real contributors to the extent of creating an archive. It emerged that the MOOC afforded an unexpected in-depth engagement from learners. There was a sense of excitement at the prospects of the MOOC’s in-classroom applications and saw its potential to enthuse students and galvanise research ideas.

Reflection on educational practices (Figure 2)

The MOOC design, through which a course was created that would (hopefully) stimulate the development of their interdisciplinary field gave the lead educators pause to reflect upon their conventional educational practices. One lead educator was struck by the careful, premeditated preparation that was required for crafting a video in the MOOC.

You’ve got seven minutes to put across maybe a whole range of complex ideas, you have to think about each word, each phrase, each sentence, you have to script it quite carefully, you have to engage people (LE2).

Unaccustomed to the short video format of teaching, one lead educator scripted a teleprompt, which, although eliding some of the “spontaneity of an interaction” seemed to her/him “better than umming and aahing my way through... a precious couple of minutes” (LE2). This has implications for the second activity system. In part, because of the MOOC’s format – courses structured into steps within weeks and punctuated with text, videos, quizzes, assignments, peer reviews, discussions – and because the course would be globally accessible, the educators were induced to consider new ways of structuring their educational resources and their teaching. The expected new additions to the community node (MOOC participants from around the globe) and the MOOC platform thus influenced the educators’ considerations of how they structure their teaching and educational resources. As one of the lead educators (LE1) pointed out:

[I]n terms of structure... the MOOC, because of the framework, has given me some new skills after 20 years of doing this, to think about how to structure assignments, students’ engagement with the lectures, so that’s also been really helpful.

This finding coheres with previous research which found the process of creating and designing an online course for the first time stimulated the educator to reconsider and reflect upon her role as an educator and issues – such as course structure and intention – long put to rest in face-to-face teaching (Peruski and Mishra, 2004). Apart from learning about course design, the lead educator remarked that developing the MOOC had taught her/him “how to start thinking about bridging online and offline” in her/his teaching and had brought home the “significance of building an archive” which would permit global access for their new field (LE1).

Reflection on educational practices (Figure 3)

When the MOOC went live with its thousands of participants (MOOC students), the lead educators had occasion to consider their own educational practices. The careful crafting and structuring of the course led LE2 to reconsider giving the same lecture to undergraduates “40 times” and that s/he was “probably a bit tired by now”. The leader educator continued:

...whereas if I thought about it in the way we did with the MOOCs and set it up and scripted it and thought about exactly what I really want to emphasise here and what questions did I want to ask, I’d have a more engaged student response - I’m sure I would... it’s about the preparation of the material and the presentation of it (LE2).

This lead educator considered that producing crisp, carefully thought-out videos of her/his lectures would allow for a much richer and engaged discussion with students. It was considered less effective to offer the same lecture repeatedly to students who were often fatigued from a long day and struggled to muster the requisite concentration and interest (LE2). The other educator was impressed by the formation of learning communities online and a Facebook group which was created by cancer patients who were taking the course:

There’s something about the formation of a community, and the irony is that it seemed to have congealed in a more palpable way on the MOOC site, than it does in my face to face teaching.

The educator was interested in using social media for teaching and said that s/he wanted to “try and see if what I’ve learnt from the MOOC, in terms of the significance of community, and really, sharing of stories, can somehow build that back into our undergraduate teaching” and was keen to use components of the MOOC course as a “springboard” for classroom teaching (LE1). The MOOC’s openness fostered a unique sense of community which they had not found possible in a small traditional face to face classroom.

Contradiction (Figure 3)

A “primary contradiction” emerged between the object (the development of a new field) and the MOOC design and its CC licensed content (Engeström, 2001 p 137). The MOOC design incorporates open enrolment to non-registered students. However, intellectual property rules stipulate that copyrighted material cannot be made available to non-registered (i.e., MOOC) students. This means that while the mediating artefacts allowed the educators to reach far wider audiences in the development of the field, this aspect of openness was constrained by the illegality of using important copyrighted materials which are crucial to the field and by implication its development. One of the lead educators saw the “lack of copyright access to key readings in the field” as reducing the “intellectual integrity” of the course (LE1) while the other lead educator considered this a “huge limitation ... of the depth of the course” (LE2). In this way the open aspect of the MOOC design, i.e., open enrolment, was an enabler in the development of the field, but also a hindrance because key materials in the field were closed and thus could not be used.

Conclusion

Activity theory provided an appropriate conceptual and analytical framework for examining the shared activity of creating and running a MOOC and how educators’ practices can change over time. Our focus has been the influence of mediating artefacts - the MOOC design and the open content into this activity system. We have found that there are tentative indications after the MOOC having run, of changes in educator’s pedagogical understandings intentions, in their appreciation of the affordances of the MOOCs and of their attitudes and understandings of openness. Participating in making and running MOOCs provides opportunities to deepen understanding of the affordances of open online learning, the potential of OER and openness. We could clearly see that this had prompted reflection on pedagogy and teaching, including changing practices.

An extended analysis will pinpoint the disturbances and contradictions in the systems which could account for these shifts, and a third round of interviews conducted some six months after the MOOC was completed will enable deeper understanding of whether there have been changes over time of the educator’s practices and their attitudes towards openness.

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