DEVELOPING A CONNECTIVIST MOOC AT A COLLEGE OF EDUCATION: NARRATIVE OF DISRUPTIVE INNOVATION?

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ABSTRACT

A case study involving the establishment of a Connectivist massive open online course (c-MOOC) at a college of education is presented. c-MOOCs are seen to represent an approach to learning that should be of interest to educators preparing their learners (the teachers of tomorrow) for life and work in a knowledge society. The paper differentiates between c-MOOCs and courses that are labeled massive, open, and online - MOOCs, but of a different kind and that reflect theories differing from Connectivism in most essential respects. Then, it examines the case of establishing a c-MOOC at the college using a methodology for analyzing organizational transformation triggered by the adoption of computing technologies. Through the narrative analysis of the actions characterizing the implementation of our initiative, we have succeeded in understanding how the affordances of MOOCs may subvert the mainstream agenda of an organization and its established practices. This understanding is valuable in future plans to establish a MOOC in its appropriate context. The rise of the MOOC is relatively young; hence studying how to implement it is also in its infancy. The presentation aims to contribute to this research-in-progress by bringing the teacher educators' point of view.

KEYWORDS

Connectivism, innovative pedagogy, online learning, open educational resources (OER), PLE/PLN.

1. INTRODUCTION

The idea of networked learning as the springboard to achieving the goal of preparing teachers for education in the digital age has roots in the theory of Connectivism, according to which learning is seen as occurring in the nodes where people, content, and digital interfaces meet. The best known practical application of the Connectivist theory of learning is found in the idea of the Massive Open Online Course (MOOC) such as the first one that took place in 2008 and was facilitated by Siemens and Downes, who have developed the theory of Connectivism, aiming to consider the broad and wide effects of the network society on learning and teaching (Siemens, 2005). Connectivism is based on the idea that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks (Downes, 2007). Connective knowledge is the knowledge that results from connections among properties of different entities. As a theory developed in an age of abundant information and connections, Connectivism assumes that the learner's role is not to memorize or even understand everything, but to have the capacity to find and apply knowledge when and where it is needed. In line with Bruns's (2008) concept of 'produsage', Connectivist learning is also based as much upon production as consumption of content, while the role of the teacher is both a novel role – to enable collaborations with and among the learners in order to create and re-create content, and a constructivist role – to design interactions in which learners make connections with existing and new knowledge resources. Unlike earlier pedagogies, the teacher is not solely responsible for defining, generating, or assigning content.

Connectivism is an approach to teaching, learning, and student assessment requiring radical changes in thinking on the part of all stakeholders at the educational institution in which such a course is to take place. It is not self-evident that the institution, which has its established content foci, instructional approaches, and organizational structure and practices, would immediately welcome courses embodying such departure from what has been defined as normative. It is also not at all certain that the proposed participants in Connectivist-based MOOCs, whether as instructors or as students, would welcome the change. The MOOC therefore

becomes an example of innovation and change, and an object of inquiry into organizational change and leadership. The type of learning that has been found to occur in Connectivist MOOCs appears to be based on processes that educators wish to encourage in their students in order to prepare them for life and work in the 21st century. There is no doubt that such a change in conceptualizing learning and teaching should be considered in colleges of teacher education; however, there is also no doubt that resistance will present itself, as was indeed the case in our own initiative.

The paper first differentiates Connectivist MOOCs from courses that are labeled massive, open, and online but reflect theories differing from Connectivism in most essential respects. Next, an initiative of establishing a Connectivist MOOC at an Israeli college of education is described, using a methodology for analyzing organizational transformation triggered by the adoption of computing technologies. The paper concludes by depicting this analysis as a narrative network constructed from story fragments with potential connections.

2. TWO TYPES OF MOOCS: AN OVERVIEW

"MOOCs have been around for a few years as collaborative techie learning events, but this is the year everyone wants in", says a recent New York Times article[1]. "MOOCs (Massive Open Online Courses) are the educational buzzword of 2012", adds Sir John Daniel (2012). The media hype about MOOCs in higher education has focused on their massive scale; however, the real revolution – as Daniel puts it - is that "universities with scarcity at the heart of their business models are embracing openness" (Daniel, 2012). From a pedagogical point of view, the MOOC phenomena redefines what is meant by “learning,” “teaching,” and “assessment,” and at the same time blurs the boundaries between them.

The first MOOC took place in 2008 as an open online course at the University of Manitoba, Canada. The course, Connectivism and Connective Knowledge (CCK08) was facilitated by George Siemens and Stephan Downes, who have been developing the pedagogical theory of Connectivism and have regarded MOOCs as practical implementations of their theory (Siemens, 2012). The term itself was coined by Dave Cormier who joined in facilitating several other MOOCs, including PLENK2010[2] that has been described as “a conglomerate consisting of various layers: live sessions…recordings…a complexity of discussion forum… the course Wiki and Blog…and the unique course aggregator named the Daily” (Levy, 2011). MOOCs of that type were later labeled “Connectivist MOOCs” (c-MOOCs), to distinguish them from the current wave of MOOC offerings that share a little with Connectivist pedagogy. It is the purpose of this section to make this distinction clearer by elaborating on Downes (2012) terminology of c-MOOCs versus x-MOOCs.

2.1 Connectivist MOOCs (c-MOOCs)

Learning in Connectivist-based MOOCs reflects processes necessary for life and work in a global networked world, in which information is characterized by rapid change and renewal, is collectivized, poorly organized, and incompletely evaluated (Kop & Hill, 2008). The challenge is for each learner to construct a personal learning network (PLN), by eliciting what is personally meaningful from the network of information and interactions. Such learning is “…highly social. The learning comes from content presented by a lecturer, and then dialog via social media, where the contributions of the participants are shared” (Quinn, 2012).

In addition to the abovementioned CCK08 and PLENK2010, two noteworthy c-MOOCs are the eight-month long Change11[3] and the short six-weeks MOOCMOOC[4].

These c-MOOCs are revolutionary in that they erase existing boundaries between the institution and the world “outside” it. Such Connectivist-based MOOCs call into question academic responsibility and institutional accountability. However, the seeds of the MOOC that were first spread as practical implementations of Connectivist theory have been supplanted by others, which have developed into a different "flower" entirely, as the next section details.

[1] "The Year of the MOOC" http://www.nytimes.com/2012/11/04/education/edlife/massive-open-online-courses-are-multiplying-at-a-rapid-pace.html?pagewanted=1&_r=1

[2] PLENK2010 – Personal Learning Environments, Networks and Knowledge. http://connect.downes.ca/

[3] Change: Education, Learning, and Technology! (Fall 2011).

[4] MOOC_MOOC a MOOC about MOOCs (Summer 2012). More Connectivist MOOCs offered since 2008 can be found in http://mooc.ca/.

2.2 Other Types of MOOCs (x-MOOCs)

Right until the fall of 2011, the term "MOOC" was not used much by educational technology scholars and was not acknowledged at all in the mainstream public discourse. Those who did mention the term unequivocally denoted a practical application of Connectivism, as has been briefly discussed above.

The turning point seems to be with the Artificial Intelligence experimental open online course offered in the fall semester of 2011 by two well-known computer scientists from Stanford. The first wide publication of this course in the New York Times (August 15, 2011) [5] didn't even mention the term "MOOC". Six months later, Quinn first distinguished between two types of MOOCs: the Stanford model and the Connectivist model. The goal of both types, writes Quinn, is to enable a free and "high quality learning experience to anyone with sufficient technical ability and access to the Internet", but as opposed to the social nature of the Connectivist model, in the Stanford model "the experience is, effectively, solo"[6].

During the spring of 2012 the wave turned into a Tsunami. Numerous news articles, blog posts, media interviews, and social networks posts flooded the Internet with new MOOC announcements, calls for participation, and critiques. Within a few weeks, MIT announced MITx; a consortium of Ivy League universities including Stanford and Penn State established Coursera; and Harvard University joined forces with MIT to create EDx – to name only a few. In March, Hill[7] wrote that "there are really two variations of MOOCs with quite different approaches – witness the Stanford and MITx version vs. the rhizomatic version". While the "O" that stands for "open" is thought to be the dominant letter in the original Connectivist branch of MOOCs, "M" seems to be the dominant letter in the Stanford branch. The most press cover, however, has been based on the Stanford model of MOOCs. In a blog post in July 2012, Downes (2012) therefore proposed a new terminology: x-MOOCs like Udacity, EdX, Coursera; and c-MOOCs – Connectivist MOOCs – providing not only open online content in a domain but also immersion into a community of practitioners associated with that domain. Today, while x-MOOCs clearly dominate, c-MOOCs are also spreading around the globe and the variety of subjects they deal with. Both types provide new models for learning at a time when traditional school learning is widening the rift between learners' experiences in and of the world and their experiences in formal school settings.

2.3 c-MOOC as a Pedagogical Innovation

The type of learning that has been found to occur in MOOCs of both types appears to be based on processes that educators wish to encourage in their students. Anderson (2008) pinpoints two major forces shaping the knowledge society: "greater intercultural interaction, enabled by global electronic networks, and an economic system in which knowledge functions as a commodity" (p. 7). In the face of such a "given," the global citizen needs to learn how to construct knowledge and develop adaptability, the ability to work in teams, and skills relating to the retrieval, organization, and critical evaluation of information (Mioduser, Nachmias, & Forkush-Baruch, 2008).

Our work, started prior to the current public interest in the MOOC phenomena, is based on the Connectivist vision of the c-MOOC. We see this model as aiming to bring about change and innovation on a number of levels:

Pedagogical – with a redefinition of what is meant by "learning", "teaching", and "assessment". The redefinition of pedagogy will affect learners and teachers alike.

Content – once a traditional course (even a traditional online course) becomes a c-MOOC, it demands deep-level revision of content. In addition, as the content is distributed and takes on a "life" of its own, independent of its point of origin, a c-MOOC necessarily involves the erosion of traditional boundaries regarding content creation and development.

Technological – c-MOOCs are founded on technologies that encourage interaction between people, people and content, and people and interfaces.

Organizational and cultural – the c-MOOC instructors have to collaborate in ways that they have probably not before experienced and restructure their courses.

[5] Markof, J: "Virtual and Artificial, but 58,000 Want Course". *New York Times – Science*. http://www.nytimes.com/2011/08/16/science/16stanford.html?_r=2&ref=technology

[6] Quinn, C: MOOC reflection. Posted February 29, 2012 in http://blog.learnlets.com/?p=2562 .

[7] Hill, P: *E-literate blog*. http://mfeldstein.com/moocs-two-different-approaches-to-scale-access-and-experimentation/

It is against this background that a c-MOOC was seen by the authors as representing suitable preparation for developing, not only specific content knowledge, but also the 21st century literacies noted above. The initiative arose from our shared conviction that it would provide a model for learning at a time when traditional school learning is widening the rift between learners' experiences in and of the world and their experiences in formal school settings. We therefore initiated a conversation in our college with the aim of finding a suitable framework within which to establish a c-MOOC for our students – the teachers of tomorrow. The next section describes the first steps in our ongoing effort.

3. THE JOURNEY TO IMPLEMENTATION

We present the experiences characterizing the journey to establishing a c-MOOC at our institution as a narrative network (Pentland & Feldman, 2007), based on personal reflection and analysis of interviews with stakeholders whom we identified as potential partners in our initiative.

The analysis that follows is based on Pentland and Feldman's (2007) characterization of a narrative network "as a device for representing patterns of 'technology in use'." (p. 781). Pentland and Feldman use the term network "to draw attention to both potential and realized interconnections between actants and actions and the fluidity of these interconnections" (p. 781). The "narrative" aspect is rooted in a philosophical perspective that "different interconnections make different stories" (p. 781). This approach has roots in actor-network-theory (ANT) (e.g. Latour, 2005).

3.1 Enactment of Organizational Forms in a Narrative Network

This section presents a number of stories centered on meetings we had with various potential partners in our organization. Each story involves a number of actants: the authors, the potential partners, and the idea of the MOOC with its affordances. In ANT, actants include both human players (actors) and non-human entities such as an idea, a tool, a computer interface, etc. (Latour, 2005). An affordance refers to the possibilities latent in any part of the environment vis à vis an agent. Gibson (1977), who first coined the term in relation to animals interacting with their environment, defines an affordance as the opportunities for action provided by a particular object or environment. Norman (1988) applied the concept of affordances to understanding people's interactions with everyday things and computer interfaces alike. Just as an everyday object like a door handle offers possibilities for opening the door by turning it while simultaneously pushing or pulling the door (and something in the design of the object will hint at its use), so computer interfaces should be designed in such a way that their use is suggested to the user.

What is specifically relevant to the present paper is that the concept of affordances foregrounds the notion that things – in our case, the c-MOOC – can be characterized by a "psychology" or that they have embedded within themselves properties for action. However, as Kirkeby (2003) points out: "Affordances are emergent properties of objects in the environment but only in relation to actors through potential activities" (p. 10). This makes affordance theory – especially later emphases on the relational aspect of affordances– compatible with other theories that consider the potentials of "things" in relation to subjects (human actants in ANT) and not only as having properties for action in themselves.

The narratives that emerged from our interactions with people whom we identified as potential coalition partners in the establishment and implementation of the c-MOOC reflect how such an initiative involves an organizing of people in relation to a technology. In our case, the potential affordances of the technology at the center of the initiative were seen as having a possible destabilizing influence on the existing practices of the organization.

The narrative methodology – itself mirroring many aspects of Connectivism (in the broad sense of emphasizing connections and networks) – enables us to compile stories told from different perspectives, based on our encounters with the potential partners we contacted, and to trace actions and reactions when the idea of the MOOC and its affordances were placed as the focus of the discussion. Each story presents the perspective of at least one potential partner in interaction with us (the authors) as initiators of the MOOC idea. This methodology is reflected in Pentland and Feldman's (2007) observation that "anything that influences the 'plot structure' is organizationally significant" (p. 784).

3.1.1 Story 1: Don't Shake the Ground

Shortly after developing our first plan of action, it became clear from a discussion with Anna – one of the department heads[8] - that the specific context was not acceptable since the existing course had itself undergone numerous transformations and had only that year achieved the goals that had been set for it. The instructors and students had reported being satisfied with the newly transformed course so any additional transformation – especially one requiring a total change of direction – was not perceived as appropriate at the time. The arguments against setting up the c-MOOC in the proposed context were expressed as follows: "The instructors have been through enough changes in the development of the existing course, and they will be unwilling to change things again, especially if we are talking about such a radical change of emphasis." (Anna Interview, September, 2011).

These arguments reflect the tension between the potential transformations the c-MOOC initiative might bring about, and the existing organizational practices. However, alongside the arguments against establishing the proposed c-MOOC, Anna was in favor of the general idea of establishing a c-MOOC at the college and encouraged us to pursue the initiative in relation to an alternative disciplinary field. We therefore reconsidered the plan and decided to direct our efforts to finding a more appropriate context.

3.1.2 Story 2: Openness in Three Acts

This story is mainly based on a meeting with Beth, coordinator of the Social Involvement program of the college (May, 2012). The narrative constructed here cuts across at least three sub-plots, each a few months apart from the others. Most of the actants (people and technologies) were the same, or they referred to one another across the story plots. The connection between the chronologically first narrative and the two later ones became apparent to the authors only a short while before the meeting on May 2012. For the sake of clarity, the narratives are presented chronologically as Stories 2-A, 2-B, and 2-C. The reflections on these connections are deliberately presented as interruptions to the chronological sequence since it is the reflections themselves that helped us put together the analysis.

Story 2-A: Vision of an Open Blog

The first sub-plot took place about a year before the MOOC initiative was even conceptualized by the authors. It involved a proposal by one of the lecturers in the program, Jake, to set up an open blogging environment for one of the courses in the Social Involvement program. In retrospect, the blogging environment was to include many elements that also characterize MOOCs, but these were not identified as such by any of the people involved. This narrative is presented in detail below – as a flashback in the framework of the third (Story 2-C).

Story 2-B: Vision of an Open Learning Environment

The second sub-plot is set in March 2012 when the authors approached Beth with a proposal to set up a c-MOOC in order to bring together various inter-linked aspects of the courses comprising the program. In our search to pinpoint an appropriate context, we decided that the openness of such an online environment might answer many of the needs arising from the courses.

Each of these courses contains both a theoretical and a practical component, and as communicated to us by Beth, what was needed was some way of connecting between the theoretical and practical components of each course, and between all the courses pertaining to the program at the college.

This potential connection between all the courses formed the focus of the meeting between us – the authors and Beth – in March 2012. We presented the theoretical background underlying MOOCs and explained how such an online environment could help to create connections between the various courses, and between the theoretical and practical aspects of the program. Beth clearly expressed interest but requested that we continue to flesh out the idea and return to her with a more developed proposal that she could introduce to the course lecturers at a later date.

A few weeks passed, during which we reassessed the objectives of the c-MOOC initiative and came up with a plan. During this period, we met with the lecturer whom we considered would be a potential partner in the revised initiative, Jake, and realized that our initiative shares many similarities to the one he had presented a year earlier (Story 2 A).

[8] Pseudonyms are used to refer to the various stakeholders or potential coalition partners.

Story 2-C: Openness vs. Control

The setting for the third sub-plot was a second meeting with Beth on May 2012. Beth was asked to recall the prior initiative (Story 2-A). This initiative – sharing similar characteristics to our conception of a c-MOOC although it had not been described as such at the time – had essentially been rejected. It is interesting to consider, in retrospect, the basis for the rejection since what happened then sheds light on the factors to be considered when proposing such an initiative within the educational establishment.

In her reconstruction of the earlier meeting, Beth mentioned that it had involved a number of people whose positions could have made them potential partners in the endeavor, including Jake. She mentioned that one of the main objections was that the open blog envisaged by Jake would bypass the college's official Internet site, and that the issue of locus of control was also voiced by various attendees. Although, in retrospect, the authors consider the issue of locus of control to be the main one underlying resistance to the establishment and implementation of a c-MOOC in an institute of education, the objections at the earlier meeting focused mainly on the issue of the website as a marketing conduit.

3.1.3 Story 3: c-MOOC as a Disruptive Innovation

The actants in this story are the authors themselves. Awareness of the broader contextual implications of establishing a c-MOOC occurred when the authors began to consider how a c-MOOC, almost by definition, will break the boundaries of the institution that gives birth to it since the locus of control moves from the institution, or from the lecturer who is an official representative of the institution, to the students and people outside the institution itself: "It is clear now that MOOCs can turn education on its head. Control is no longer with the teacher or teaching agent as in behaviorism, or with the learner, as in constructivism, but distributed, everywhere, and nowhere…" (Authors meeting, May 2012).

Awareness of the potential tension between the affordances of the c-MOOC and the institution's organizational culture took place at a particular moment in the meeting, when discussing the objections that had been raised in Story 1 and when considering how to revitalize the initiative described in Story 2. It was then that we realized that c-MOOCs may subvert the organization's agenda by placing the locus of control outside the boundaries of the organization: "A MOOC goes beyond the time and space barrier reflected in traditional pedagogy... It breaks the barriers between the natural technological living space of the learner and the LMS set up by the instructor." (Authors meeting, May 2012).

In an educational organization, "established" courses are those around which there is consensus by the "establishment." The educational establishment may be understood in the broad sense of what is accepted by the society's education system, and in the specific sense of what is accepted by the specific institute of education. Since the implications of these conclusions were far-reaching, we decided to verify them and approach Beth again, as well as additional persons whom we identified as actants in these events. This led to the narrative presented above in Story 2-C.

3.2 Connecting the Threads of the Narrative Network

The stories presented above would remain narrative fragments (Pentland & Feldman, 2007) unless a deliberate attempt is made to show how they constitute part of an organizational network. They point out: "Actants are connected through actions into narrative fragments" (p. 789). Each of the stories presented in the previous section is, indeed, a narrative fragment. However, they also observe: "Narrative fragments are connected with one another in the construction of narratives" (p. 789). They illustrate – and visually depict – how it is possible to construct a narrative network out of a number of narrative fragments in the context of their own case. Fig. 1 was constructed in accordance with their example and depicts the narrative network of our MOOC initiative. It is possible to see how parallel stories involving the same actants gained coherence as the authors connected the fragments into a single network.

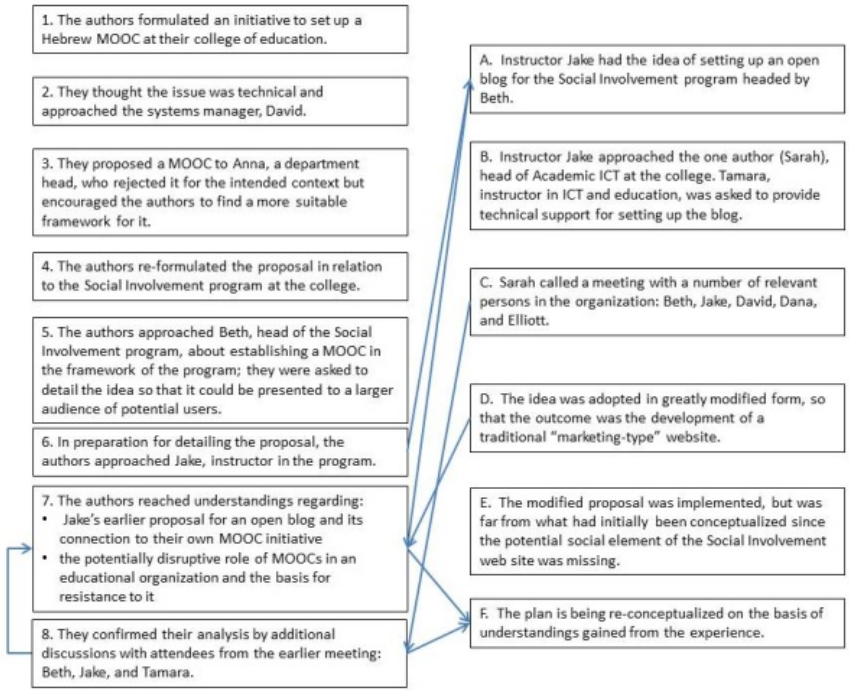

Figure 1. The Narrative Network of the MOOC Initiative

The narrative network can help to identify fragments that might get associated with other fragments in efforts to change organizational practices. For example, narrative fragment 7, referring to the authors' awareness of what a MOOC really means in an educational organization, can be foregrounded in any subsequent discussions on moving forward the MOOC initiative. It can be juxtaposed with narrative fragment D, to exemplify how a MOOC initiative can be diverted in directions that, albeit compatible with the organization's existing practices, contradict the organization's vision and purported practices. The contrast between these two narrative fragments parallels the distinction made by Pentland and Feldman (2007) between the ostensive and the performative aspects of any organizational routine. Whereas the performative aspect refers to actual practices, the ostensive aspect refers to the participants' awareness and understandings of these practices.

Through the narrative analysis of the actions characterizing the implementation of our MOOC initiative, we have succeeded in understanding how the affordances of MOOCs may subvert the mainstream agenda of an organization and its established practices. This understanding, reflected in a node connecting between a number of narrative fragments comprising the stories presented earlier, is valuable in future plans to establish a MOOC in its appropriate context.

4. SUMMARY

In this paper we have followed up on the roadmap for establishing a c-MOOC at our College of Education. Our experiences surrounding the initiative was comprised of meetings with stakeholders whom we identified as potential coalition partners, interviewing some of them, and reflections between us that arose from discussions with them and with others. Applying narrative network methodology to make sense of the events, the experiences are presented as a number of stories whose inter-connections become apparent following narrative analysis. The analysis has raised significant questions regarding the organizational context in which a MOOC may be implemented and has implications for understanding organizational transformations in light of technological innovation.

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