MOOCs and the Liberal Arts College

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Abstract

In this paper, the author examines lessons from massive open online courses (MOOCs) for small liberal arts colleges (LACs) in the United States. While some consider MOOCs a threat to LACs, they can also be seen as a provocation to spur small institutions to improve their offerings and assert their place in the higher education landscape. The paper examines how LACs might draw on the best tools, approaches, and structures emerging from the MOOC revolution in order to help students build lifelong learning habits.

Keywords: massive open online course (MOOC), liberal arts college (LAC), institutional strategy, lifelong learning

Introduction

At first blush, the massive open online courses (MOOCs) offered by Coursera, edX, and Udacity contrast markedly with the learning environment of liberal arts colleges (LACs). Where MOOCs are massive, LACs are defined by small classes. Where MOOCs are open, LACs cultivate selectivity. Where MOOCs operate in the "high-tech" realm of online content delivery and "big data," LACs emphasize residential interactions and "high-touch" relationships. For these reasons and others, some higher education leaders have discounted the educational value of MOOCs and doubt their potential to disrupt the liberal arts tradition (Edmundson, 2012; Falk, 2012).

Nevertheless, MOOCs are of great interest and concern to those of us committed to the LAC experience. Free college-level courses raise economic and existential concerns for small colleges with high tuition rates (Judson, 2013). On the flip side, careful employment of MOOCs could provide alternative income streams, enrollment options, and credentialing frameworks to better position small colleges in a challenging and highly competitive higher education market. Certain approaches and technologies popularized by MOOCs may be adapted to support instruction at LACs, for example, offering remediation outside of class-time to students who need support, scaffolding individual problem-solving tasks (An, 2010), or supplementing the curriculum with more advanced or rare opportunities.

More importantly, MOOCs provoke us, as faculty, to examine our own teaching practice. We defend the unique value of face-to-face interactions with our students while allowing traditional pedagogies and authoritarian classroom roles to dominate our practice. We cling to traditional texts and ways of producing them, even as our students produce videos and curate content online (Lukes, 2012). Insofar as MOOCs provoke LAC faculty to think more deeply about learning, exploring new approaches, and reviving sometimes staid teaching techniques, they present an exciting opportunity (Davidson, 2012b).

This position paper outlines some of the ways in which LACs can adapt and flourish in the face of MOOCs, adopting the best of educational technologies while asserting the continuing value of the liberal arts college tradition.

MOOCs as a Threat

> In 50 years, if not much sooner, half of the roughly 4,500 colleges and universities now operating in the United States will have ceased to exist. The technology driving this change is already at work, and nothing can stop it. (Harden, 2013, p. 55)

"Thirty years from now the big university campuses will be relics. Universities won't survive. It's as large a change as when we first got the printed book ... Higher education is in deep crisis."
– Peter Drucker (quoted in Lenzner & Johnson, 1997, p. 126)

MOOCs have been portrayed as a disruption (Horn & Christensen, 2013), a "tsunami" (Brooks, 2012), a threat to faculty autonomy and intellectual property (Schmidt, 2013), a Trojan horse disguising for-profit motives (Cost et al., 2013), and a "techno-utopian fantasy of automating higher education and driving its price to zero" (Mazel, 2012, para. 2). *The New York Times* and *The Chronicle of Higher Education* termed 2012 the "year of the MOOC" (Pappano, 2012; Watters, 2012b), and predictions abounded that institutions of higher education would soon face the same fate as travel agents and record labels, made obsolete by cheap or free online alternatives (Shirky, 2012).

Nevertheless, history tells us that traditional institutions of higher education will likely continue to coexist with MOOCs (Siemens & Matheos, 2010). As Peter Drucker's comment above illustrates, predictions about the Internet destroying higher education are nearly as old as the World Wide Web itself. Large, elite institutions may be shielded, at least in the short term, by their reputations and endowments from the impact of MOOC mania. Indeed, some of these institutions – for example, Stanford University, Harvard University, and the Massachusetts Institute of Technology (MIT) – are centers for the *production* of MOOCs, being the birthplaces of the "Big-Three" MOOC platforms: Coursera, edX, and Udacity. Local and highly specialized institutions, including many community colleges, will likely also weather the storm because of their niche markets and lower costs (Cusumano, 2013). The institutions deemed most vulnerable in this revolution are those in the middle, where costs are high but the buffers of reputation and endowments are lower. LACs are in the eye of the storm.

This storm has been brewing for quite some time. It is part of a changing dynamic within all information industries that reduces the power and influence, indeed the necessity, of mediating institutions (Siemens & Matheos, 2010). It is also shaped by a cultural shift in the meaning and purpose of education. While LACs espouse a holistic approach to education, emphasizing citizenship and critical thinking over specific career skills, the MOOC revolution is part of a larger trend to view education as a service. This consumer-oriented view emphasizes the connections between higher education and future employment or income (Kiley, 2012).

The residential college experience, while always limited in practice, has traditionally occupied a dominant place in the cultural imagination. The vision of higher education as a "bundled" product provided by one's "alma mater" is giving way to the idea that education can be cobbled together with online courses (massive or less so), internships, and other learning experiences (Kamenetz, 2010). MOOC providers like Coursera and Udacity emphasize the link between education and employment by offering placement services, promising to bring successful students to the attention of Google and other big-name companies. These cultural and economic changes, coupled with rising tuition, started to take their toll on LACs long before the MOOC "tsunami." Out of 212 LACs identified in 1990, only 130 can still be classified as such today. Most of the remainder changed their institutional missions to orient themselves more to the professions while some merged with other institutions and a few closed their doors (Baker, Baldwin, & Makker, 2012; Jaschik, 2012).

Institutions that will weather this latest storm are the ones that are able to convince students, parents, and donors that their model of education is not only viable, but superior to free or cheap alternatives. Already, institutions are rallying their defenses, pointing to the value of a face-to-face education. Statistics professor Susan Holmes in an oft-quoted Public Broadcasting Service interview, opines, "I don't think that you can give a Stanford education online, in the same way as I don't think that Facebook gives you a social life" (Michels, 2013, para. 39). This has been the response of many defenders of traditional educational models. Critics of MOOCs are also quick to point to a number of high-profile failures, including student complaints about a lack of faculty responsiveness (Watters, 2012a), and technological limitations (Kolowich, 2013b) that highlight the growing pains of the Big-Three MOOC platforms. While such criticisms are important, the challenge of MOOCs is not just in their technology and structure, but in the way they are changing expectations about the cost and delivery of education.

MOOCs as Tools for Blended Learning

"Does it really make sense to have thousands of community-college instructors developing the same courses?"
– Coursera co-founder Daphne Koller (quoted in Kamenetz, 2012, "Tech Ed," para. 28)

Professors may well assign MOOCs as homework, for example, and then build on the information in them through more in-depth and interactive discussions in the classroom. This has been referred to as "flipping the paradigm," so that the classroom is used for interaction, not passive absorption of the professor's insights. (Skorton & Altschuler, 2013)

A number of faculty and administrators from elite LACs have taken an "if you can't beat 'em, join 'em" approach to MOOCs. Wellesley College became a partner in edX in December of 2012 and Wesleyan University faculty are offering courses through Coursera in 2013 (Tilsley, 2012). Even LACs not interested in producing MOOCs themselves are looking for ways to employ MOOCs in their own courses or degree programs. Indeed, MOOCs fit into the blended learning approach (Daly, 2013) currently espoused by many LACs. The Associated Colleges of the South has instituted a grant program to incentivize blended learning. Faculty at Wesleyan and Bryn Mawr College have integrated modules from the Open Learning Initiative (OLI) at Carnegie Mellon University into courses on statistics and chemistry (Kolowich, 2012c).

Blended approaches purport to combine the best of online and face-to-face teaching and learning. Technology offers students access to multimedia materials and asynchronous, self-scheduled learning, removing content delivery from the face-to-face classroom to make room for problem solving, knowledge-application, and hands-on activities. The insertion of MOOCs into this framework can be problematic, however. Aligning a face-to-face course with a MOOC is not the same as adopting a textbook or putting together a course packet. I summarize some of the contrasts in Table 1.

Table 1. *Textbooks and MOOCs – comparing elements*

Textbook	MOOC
Text based	Usually video based
Supplementary multimedia content and quiz banks often available at extra cost	Quizzes and assignments usually embedded in video content
Available at any time	Available during period designated by the provider, with the exception of some self-paced Udacity courses (Marques & McGuire, 2013)
Intended for use in a course setting	Terms of Service may limit the free use of the materials for credit-bearing courses (Kolowich, 2012b)
Often extremely costly	Free to the student
Responsibility of purchase lies with the student	Responsibility for any required fees lies with the institution
Easy for instructor to skip a chapter, assign alternate or supplementary readings	Impossible to replace or customize content within the MOOC itself
Generally copyedited and aided by graphic designer, fact checkers, and editors	Video production value leaves a lot to be desired (Scholz, 2012)

Since MOOCs are generally based on existing face-to-face courses, they follow the rhythm of their home campus in terms of semester length, lecture frequency, and workload. While pieces of MOOCs, such as video lectures, simulations, assignments, quizzes, and exams may be of use in a face-to-face class, the online course as a whole may be too inflexible to allow such materials to be easily blended with a face-to-face class on a different campus. MOOCs are structured as hubs around which individual learners gather, not as open educational resources or even learning management systems that can be adapted to other purposes, though recent agreements between Coursera and 10 state university systems may signal a change, with promise that "professors teaching at these schools will have the opportunity to develop online courses through Coursera, as well as adapt existing Coursera courses for their own classrooms" (Coursera, 2013, para. 3).

MOOC as a Provocation

Content is easily duplicated and has no value. What is valuable, however, is that which can't be duplicated without additional input costs: personal feedback and assessment, contextualized and personalized navigation through complex topics, encouragement, questioning by a faculty member to promote deeper thinking, and a context and infrastructure of learning. Basically: human input costs make education valuable. (Siemens, 2011, para. 12)

By democratizing Ivy League-level lectures, Coursera and its cohorts will force the nation's colleges to prove their value in other ways. (Oremus, 2012, para. 14)

Arguably the most important role MOOCs can currently play for LACs is as a foil against which to demonstrate our value. Insofar as MOOCs push educators to reflect on the nature of learning, they are a welcome challenge (Davidson, 2012b). Already, conversations about MOOCs have prompted the development of a *Bill of Rights and Principles for Learning in the Digital Age* (Brown et al., 2013; Davidson, 2013; Kolowich, 2013a), which will certainly provide fodder for thinking about learning, both online and offline, for some time.

The flurry of attention paid to the Big-Three MOOC platforms in the last year has yielded fruitful comparisons to early experiments in MOOCs led by George Siemens and Stephen Downes in Canada, including the 2008 inaugural course titled *Connectivism and Connective Knowledge (CCK08)*. A U.S. example (though these courses transcend national boundaries) is *Digital Storytelling (DS106)*, which has been coordinated by Jim Groom at the University of Mary Washington since 2010. These courses, now termed connectivist or "cMOOCs" (Siemens, 2012) to contrast them with Big-Three "xMOOCs," use social media and Rich Site Summary to distribute course materials and manage virtual discussions (Downes, 2011). While xMOOCs center the video lecturer as the focus of the course and the course platform as its hub, the objective of cMOOCs is for students to create shared knowledge and take charge of their own learning using a blog or social media account to communicate with their peers. Indeed, the connectivist model of cMOOCs provides options for incorporating online technologies into the classroom that may be more suited to the missions and habits of LACs (King & Nanfito, 2012).

The following subsections will explore in greater detail how the challenge of MOOCs might bring about new opportunities for LACs to improve student learning and affirm the value of the education we provide.

What Could "Massive" Mean for LACs?

MOOCs offered by the Big-Three platforms have averaged 50,000 enrollees, with a high of 180,000 (see, for example, *How to Reason and Argue*, offered by Duke University). While completion rates typically range from far below 10% to a high of 19%, the smallest number of students reportedly completing a MOOC on one of the Big-Three is 313 (in Duke's *Bioelectricity* course), more students than typically enroll in the largest lecture class at many LACs. The first high-profile xMOOC, *Introduction to Artificial Intelligence*, was completed by an astounding 22,000 students, more than most LAC faculty will teach in an entire career (Jordan, 2013).

The scale of massive classes is both enticing and abhorrent to LAC faculty. The ability to reach thousands of students serves a dissemination mission, exposing people to our disciplines who might not otherwise have that opportunity. The diversity of student experiences and ideas in a massive course offers the possibility for discussion and cross-cultural connection impossible in our small and somewhat homogenous classrooms. Yet the massive scale of xMOOCs limits the amount and type of interaction between faculty and students. The mentorship and detailed feedback that is emblematic of the LAC experience is impossible with more than a few dozen students at a time. Coursera has replaced faculty feedback with peer grading, with predictably disappointing results (Watters, 2012a). These aspects of massive classes simply do not fit the mission or model of a LAC education.

Where scale would benefit LACs is not at the "massive" level, but at the small to mid-range level. Colleges with few faculty in certain specialties could band together to offer courses or even degrees with other institutions. While such consortial relationships have emerged among neighboring institutions (e.g., Five Colleges), the Internet obviates the need for physical proximity. The Associated Colleges of the South, which includes 16 colleges in 12 U.S. states, has experimented with cross-campus offerings in selected foreign languages and classics (King & Nanfito, 2012). Such collaborations could preserve courses as well as faculty lines in otherwise unsustainable disciplines.

Another interesting application of MOOCs for LACs lies in distributed or networked (as opposed to "massive") courses. A possible model is the upcoming *Feminist Dialogues on Technology*, a "distributed online collaborative course" or "DOCC" coordinated by Alexandra Juhasz of Pitzer College and Anne Balsamo of the University of Southern California that will link courses on every continent through a set of online experiences and modules. Distributed courses may offer the best of both worlds: local, face-to-face classes with strong faculty involvement that are connected with other classes to achieve economies of scale, geographic reach, and diversity of opinions.

One area where massive courses offer some advantage over face-to-face instruction is in learning analytics. It would take years in a LAC setting to assemble student data sets adequate to validate certain kinds of teaching techniques or learning objects. In a MOOC, such data can be collected and acted upon in weeks or less. In fact, EDUCAUSE (2012) predicts that MOOC "platforms may evolve from course-delivery systems toward adaptive learning platforms – systems that personalize the experience based on the learner's performance" (p. 1). However, Robbins (2013) worries that this data will be employed for marketing (in the manner of Facebook) rather than enhancing learning. At this writing, the OLI seems to be the only platform to harness these sorts of data for the immediate benefit of the learner.

What Could "Open" Mean for LACs?

> "Free software" is a matter of liberty, not price. To understand the concept, you should think of "free" as in "free speech," not as in "free beer." (Stallman, 2013a, para. 3)

The word "open" is used in at least three different ways in these debates, most of which are only partly realized through the Big-Three MOOC platforms. The first interpretation of "open" is free of cost. At this point, the Big-Three MOOCs are free of charge to the student, though there is speculation about whether this is sustainable. Some institutions, like Antioch University, have entered into financial agreements with MOOC platforms to use MOOCs in credit-bearing courses or independent studies (Kolowich, 2012a). Some MOOCs charge for the completion certificate or to take a face-to-face test to certify what the student has learned. There is much speculation about the eventual business model of MOOCs. Of the Big-Three, both Coursera and Udacity are for-profit ventures, beholden to investors and eventually, shareholders. Questions abound regarding the business models that might emerge in the MOOC industry. It has yet to be determined if profits will come from student fees, university licenses (in the manner of software licenses), or selling student data (Robbins, 2013).

MOOCs are free to students because they are highly subsidized by institutions, foundation support (such as the Bill and Melinda Gates Foundation, Google, and others), and venture capital investment (Anders, 2013; Dunn, 2010). Few LACs are in a financial position to offer MOOCs of their own because of the cost of producing the video content, building or licensing the platform, and assuring that the online distribution of the course materials does not violate intellectual property law.

The second way of interpreting "open" has to do with barriers to entry. MOOCs have no admissions criteria. Anyone can sign up. Most LACs have extensive admissions criteria, including transcripts, essays, test scores, and often, interviews. The admissions process ostensibly limits the student body to those most likely to thrive. Advising and other student support services are in place to make sure that admitted students, particularly those deemed at risk, do not fall through the cracks. Once enrolled, students must fulfill prerequisites before moving on to more specialized courses. A student might be a junior before approaching a class in artificial intelligence, for example. Committing to an open course would mean abandoning the commitment to student success, a decision LACs would not take lightly.

The flip side of open enrollment is notoriously high dropout rates. Breslow et al. (2013) characterize the edX *Circuits and Electronics* course, which had a 5% completion rate, as "a funnel with students 'leaking out' at various points along the way" (p. 21). Low completion rates have been dismissed as simply part of online life, where most users are not active participants and most enrollees are not intending to complete the course. However, some proportion of students who do not complete a given MOOC "encountered difficulties ... that demotivated and damaged them, difficulties that caused them to believe that they weren't good enough; but we don't know who they are, and we don't know what those difficulties were" (Tracey, 2013, "The Danger of Expertise," para. 5).

The third way of interpreting "open" harkens back to Richard Stallman's admonition that truly free software "respects the users' essential freedoms: the freedom to run it, to study and change it, and to redistribute copies with or without changes" (Stallman, 2013b, para. 1). Using this definition, the degree of openness in MOOCs is highly variable. A few MOOC platforms offer some of their software for reuse or modification (see Khan Academy, Class2Go, Google Course Builder, and Stephen Downes' gRSShopper). The software running edX was released as open source in Summer 2013 (EdX, 2013).

As for content, some course videos used in MOOCs are available on YouTube as well and could be repurposed in other contexts. Many of the course readings are online and available for other uses. In the case of some edX courses, the materials have been online for years as part of MIT's OpenCourseWare. However, some MOOC platforms employ Terms of Service that restrict the use of the courses or materials in credit-bearing settings (Udas, 2012).

Of even greater concern is the degree to which xMOOCs lock down student data. In many cases, student work is difficult to export. Data generated from the students' interactions with the site are not transparent to the learner. Even aggregate data is only available when the instructor posts it online (for examples, see Devlin, 2013; Severance, 2012). With the exception of Udacity, which has built a portfolio site (Udacity.me) for showcasing student projects, xMOOC providers retain the role of arbiter and owner of student credentials.

Insofar as LACs venture into the MOOC movement, we must commit to openness. Just as LACs have begun to adopt open-access policies, requiring faculty to make their research available in online repositories (Miller, 2011), our institutions must affirm a commitment to open educational resources, adopting, investing in, and producing open content and open platforms, and ensuring that structures and norms established for MOOCs emphasize student ownership of their own work in the class and the assessment data generated. LACs should adopt and expand upon the *Bill of Rights and Principles for Learning in the Digital Age* (Brown et al., 2013) and integrate the oversight of open and online education into institutional governance structures.

What Could "Online" Mean for LACs?

Online education allows learning to occur outside the boundaries of *place* and *time*. Learning can take place outside a single classroom or building, and across great geographic and cultural distances. While students may be sitting alone at their computers, through online communication via text or multimedia, they can be connected to peers around the globe. Lovejoy (2012) offers an example of synchronous online discussion using the simultaneous editing function in Google Docs during a video webinar on Google Hangouts. He found that verbal and non-verbal cues were as intelligible and communication as rich in this format as they would have been in a face-to-face classroom, despite the fact that all of the participants were in different locations.

Even for LACs, which are traditionally residential institutions (where learning takes place in the classroom, library, and dormitory, but seldom off-campus), online tools may prove to be useful. Online communication could help campuses welcome students who have not yet matriculated (e.g., recruitment, admissions, new student orientation) or those who have graduated (e.g., alumni relations). Credit-bearing courses offered online could help students stay on track to graduate on time even while taking advantage of off-campus opportunities like study abroad and internships.

In addition to mediating communication across space, computing technologies afford students the possibility to complete tasks on their own schedule and sometimes at their own pace, opening up the possibility of student-directed learning both within and outside a traditional academic calendar. Online courses are doing away with traditional class formats, breaking videos of longer lectures into smaller pieces interspersed with comprehension questions or short application exercises (Kamenetz, 2012). This is similar to what some instructors are attempting to do with clicker and polling technologies in face-to-face classrooms. Students can even speed up or slow down these recorded lectures, or simply skim the transcript instead, though some argue that even these shorter learning units may be too long for the way people use the Internet today – with divided attention, often on mobile devices in public places (Manjoo, 2013; Tauber, 2013).

Computing technology is making it possible for students to receive immediate feedback on certain kinds of work, without waiting for the intervention of an instructor or human grader. Data about student use of course materials can be correlated with comprehension outcomes to offer insights about learning. Such analyses could help a student determine whether she retains more information by reading an article or watching a video about the material, or whether he is likely to score higher when taking an assessment in the evening or first thing in the morning. Computers are not well suited for assessing higher-order critical thinking or communication skills, but for content retention and mastery of rote skills, technology can potentially offer timely, more frequent, and more fine-grained feedback than a human instructor.

Directors of all three xMOOC providers tout the power of collecting user data to transform education, but exactly how learning analytics will be used to change the user experience in MOOCs is only starting to come to light (Chu, 2013; Mackay, 2013). However, user data in MOOCs is not available to the student, the instructors using the MOOC for blended learning, or in one reported case, even to the professor who developed the course (Guzdial, 2013).

While LAC faculty are embracing blended learning models, it is unlikely that an online-only approach will ever become the norm for these institutions. Even some of the messages coming from xMOOC providers

themselves raise doubts about online-only learning. Examination of user data from the edX *Circuits and Electronics* course revealed that "those who worked on course material offline with a classmate or 'someone who teaches or has expertise' in the subject did better than those who did not" (Kolowich, 2013c, para. 2). Coursera announced in May 2013 new agreements with 10 state university systems to use Coursera content in support of, rather than to replace face-to-face instruction (Coursera, 2013).

What Could "Course" Mean for LACs?

> We say explicitly that the content is the "McGuffin" – it is the thing that gets people together, gets them talking, gets them thinking in new ways ... As time goes by, the people at Codecademy and Udacity will understand that the community that forms around the courses or subjects are a lot more important than the content. (Downes, 2012, section 3, paras. 3, 8)

The Big-Three MOOCs emphasize the course as the unit of instruction, just as higher education is moving into a "post-course era" (Bass, 2012, p. 24). Over the last decade, most LACs have implemented some combination of linked or clustered courses, co-curricular and community tie-ins, student portfolios, research experiences, and other mechanisms for fomenting learning *outside* the traditional semester-long course. In fact, MOOC technologies may prove most useful to LACs precisely in the areas between and around courses.

Open online approaches have clear applications in the co-curriculum, particularly in new student orientation, leadership training, and other activities that are repeated annually for students from a variety of classes and majors. Academic applications that transcend the course include training in techniques or methods that span different classes and disciplines (e.g., information literacy or library instruction, lab safety or instrument calibration training). Online courses or modules may be employed for refresher or remedial courses for at-risk students or those whose mastery of prerequisite material is in doubt. Preliminary data show that online OLI modules helped at-risk students succeed in certain courses at Bryn Mawr, for example (Kolowich, 2012c).

A MOOC offered as a recruitment tool (King & Nanfito, 2012), or as a way of keeping alumni engaged, would employ learning as a way of building connections to the institution to those outside the residential student body. For example, Middlebury College has offered online courses for alumni on *Social Entrepreneurship* and the *Poems of Robert Frost*, while Amherst College maintains an online book club for alumni (Stillman, 2012). Online tools could be employed to foster true connections to local or global movements for social good (Davidson, 2012a). The most important way that LACs could employ MOOC technologies and structures is to help students form personal learning networks and communities of practice that can extend beyond their classrooms and campus and continue long after they have received their grade or even graduated.

Lifelong learning is not an abstract solitary endeavor, but a skill and value that is central to the mission of LACs. Laura Gibbs, online educator from The University of Oklahoma opines, "I think the real power of MOOCs is not as content delivery; I think the power of MOOCs is in getting people to create and collaborate together ... The missing ingredient is educational communities that really work" (deMause, 2013, para. 27).

Conclusion

Even as MOOCs drive the price of structured educational content downward and engender new forms of educational engagement and credentialing (Pappano, 2012), LACs have an opportunity to reaffirm our core strengths and value. The LAC experience has never been exclusively about disciplinary content. The definitive LAC experience revolves around the transformation of individuals, intellectually and emotionally, to produce exemplary citizens. By examining MOOCs in a thoughtful, proactive manner, LACs have an opportunity to understand their promise to enable students' lifelong learning and use these lessons to innovate the liberal arts. As Jonathan Marks of Ursinus College poignantly states:

> Coursera and similar products are, for the most part, not designed to replace the kinds of undergraduate institutions that catch students during a period of momentous change in their lives, and respond to their need to discover and bring to completion their best mature selves ... [MOOCs] are in the self-improvement business. We are in the self-formation business. (Marks, 2012, para. 13)

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