Massive Open Online Courses: Looking Ahead by Looking Back

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2012 was justifiably called the "year of the MOOC." The year began with several large-scale startup MOOC providers like Coursera, Udacity, and edX capturing the attention of higher education as well as making mainstream news. With this came the cries of alarm and hope as pundits and education officials alike projected the MOOC movement into the future. Enrollments in MOOCs exploded. At the University of California, Irvine (UCI), for instance, over 250,000 students signed up for six courses that began in early January 2013. Within its first year Coursera had signed 62 university and college partners, offering more than 250 free courses to 3.1 million users.

So what about 2013? What have we learned two years after the first MOOC captured the imagination of educators and the public? While there is some evidence that MOOCs are entering the "trough of disillusionment," they continue to proliferate, with many more institutions becoming involved and many more students taking advantage of the free education that massive courses offer. But beyond the numbers, is there any clarity about the future of MOOCs and their impact?

HOW DID MOOCS SNEAK UP ON US?

In the two short years since Stanford launched the first massive open course, MOOCs have become a dominant force in higher education and have the potential for significant transformation. How did the MOOC phenomenon

become such an apparently disruptive force in such a short time? A look back at the evolution of MOOCs reveals a lot about the current context for higher education as it faces the age-old challenge of maintaining its traditions while adapting to new social needs and technology.

"OPEN" meets low cost

Since the early 2000s, the Open Educational Resource (OER) and OpenCourseWare (OCW) movements have been active and growing. When MIT announced in 2001 that it was making available its entire curriculum of courses in a free and open format, universities all over the world followed suit and now offer access to free and open courses on institutional websites and on public websites such as iTunesU and YouTube. Yet until MOOCs came along, OER and OCW still remained on the sidelines of higher education with only a few institutions, such as UCI, actually embedding OER and OCW into institutional strategies.

However, the increasing cost of higher education became a major issue, rapidly increasing student debt that has now reached levels that imperil our national economy (Huffington Post, 2013). The "imperatives" to create access to education and to reduce the overall cost of education came together suddenly when two Stanford professors offered the first two MOOCs in July 2011. As MOOC mania spread, legislators and foundations were among the first to make the connection between "open" and low-cost education. Legislatures in several states, most notably California (Lewin, 2013; Gardner & Young, 2013; Gordon, 2013), Texas, and Florida (Rivard, 2013), either funded or mandated the use of open education to reduce the costs of higher education for students and parents. The Gates Foundation (Grossman, 2013), MacArthur Foundation, Lumina Foundation (Fain, 2013), William and Flora Hewlett Foundation, among others, created programs to provide academic credit for MOOCs.

Parallel with these efforts, several major public institutions announced low-cost online degrees. Recently the University of Washington, the University of Wisconsin, and the Georgia Institute of Technology made headlines by announcing very low-cost online degrees, joining the already established low-cost providers that include Western Governors University, Excelsior College, and Thomas Edison State University. New, experimental efforts such as those of the College for America, StraighterLine, Saylor Foundation, and the Minerva Project have recently been featured in the higher education publications and press. These experiments to lower costs are sometimes predicated on competency-based education (Parry, 2013), which provides

credit for the demonstration of competence rather than the completion of courses.

Prediction: Low-cost online degrees will increase in number across a range of institutional types. These degrees will be designed for defined, deserving audiences, and will incorporate instructional innovations such as competency-based evaluation and adaptive learning.

"OPEN" meets quality and innovation

Higher education's widespread and rapid adoption of MOOCs was inspired by two related factors: the involvement of highly ranked universities and the identification of MOOCs with innovation. Stanford, Harvard, and MIT were among the first offerers of MOOCs and the organizations formed to exploit the MOOC phenomenon have business relationships with these universities. All three of these universities and several more have equity stakes in edX. Coursera has offered its university partners the chance to invest. The avalanche of top universities joining Coursera, Udacity, and edX contributed to the notion that online and open education is fully compatible with high-quality education. The spectacular success and institutional interest that supported the introduction of MOOCs created a "train-leaving-the-station" mentality among other top institutions. Boards of trustees, often composed mainly of business people, had become uncomfortable with the slow pace to adopt these innovations. Joining a MOOC organization and offering MOOCs became the symbol of responsiveness to social, market, and financial demands. It is no coincidence that the University of Virginia (UVA) was one of the first 16 universities to join Coursera very soon after firing—and subsequently rehiring—President Theresa Sullivan allegedly because UVA was moving too slowly in online education (Rice, 2012).

Prediction: The pressure for high-quality open education will continue. To be viewed as progressive and innovative, institutions will have to incorporate open education into their institutional strategies.

"OPEN" meets online

Given the overwhelming growth of online education it may seem odd to suggest that MOOCs have significantly increased the legitimacy of online education. At the macro level, online education seems fully accepted. But at the micro level, particularly at the departmental level, faculty reservations about the appropriateness of online education persist. Many of these concerns stem from a failure to understand what online education is or can become. Fortunately for online education, the first generation of

MOOCs was not only offered by top universities but most were also very well presented, providing good examples of online teaching and the value of instructional design. A "me too" attitude began to take effect, at least among "coalitions of the willing," as faculty members themselves enrolled in MOOCs and were impressed by the work of their peers. The question about online education has changed from whether to offer education online as an alternative to classroom based instruction, to what to offer online and how to offer it. The logical extension of this reasoning, still a reach for most universities, is the incorporation of MOOCs into degree education.

Prediction: Faculty resistance to online education will decrease as MOOCs continue to evolve and proliferate. MOOCs and OCW will increasingly be incorporated into degree programs.

GETTING REAL (AND POSITIVE) ABOUT MOOCS

A study of the rise of MOOCs, in illustrating the influence of open and low cost education, can open a window on the current forces affecting higher education. Similarly, a study of technology-based innovation in higher education can aid in predicting the future of MOOCs. The most recent example of technological innovation is online education, which began in 1994 and reached "take off" about ten years later. Open education followed a similar path, beginning in 2001 and becoming part of the fabric of higher education ten years later with the first MOOC offered in 2011.

OER, OCW, and MOOCs are here to stay and will evolve

Compared to the ten-year evolution of online and open education, the experience of just two years may not seem sufficient to make predictions about MOOCs. It is clear that the "gold rush" has had time to abate. However, the continued expansion of MOOCs, OER, and OCW suggests that MOOCs are not just a fad. For institutions such as UCI, which are mature in their development and dissemination of OER and OCW, the recent MOOC startup organizations add more "channels" to the mix. The selection of additional channels by institutions will be a highly strategic choice based on the objectives and intended audiences for the open material. It seems that MOOC organizations are being created every week by higher education systems, statewide consortia, and other groupings of universities (Lewin, 2013). Although all of these efforts will not be successful, every university will be involved in both producing and using OER.

Prediction: MOOCs will accelerate the development of open content and will create new channels for delivery and dissemination. Every major

university will offer significant volumes of OER. There will be no dominant MOOC provider, either for-profit or not-for-profit. Institutions will have a bewildering number of choices for expressing institutional strategies through OER and OCW. However, after many open channels are created, there will be a consolidation with some channels disappearing and others merging.

MOOCs look like online courses but aren't

A MOOC can never be a fully online course. Online courses require that students have the attention of an instructor when they need it, and this costs too much for a free course to be financially sustainable. While there are many who extrapolate the growing efficiency of technology as a substitute for a human teacher, ultimately the relationship between the instructor and student is what will distinguish high quality from lower quality offerings. Better technology, rather than distancing the student from teachers, will be used to improve learning and strengthen the student/teacher relationship. The problem is that many early MOOCs look like very well designed online courses and some are even being "taught" by instructors who do pay (or seem to pay) attention to individual students. And, as opportunities increase for students to gain academic credit for learning, MOOCs appear to be very much like regular online courses. However, the gap between the quality of instruction available in a "massive" course and one designed to include an attentive human instructor will never be fully bridged. Thus, very high quality will continue to be defined by the relationship between teacher and student. While the concerns of faculty, such as those at San Jose State (Lewin, 2013) and UC Santa Cruz (Rivard, 2013), are understandable, the main challenge to faculty is not the loss of their jobs but their ability to adjust to new technology.

Prediction: OER and OCW will expand into degree and academic credit through MOOCs. MOOCs will create universal access to higher education to students around the world. But very high-quality education will continue to depend on highly skilled and technologically informed faculty. Institutions will gain competitive advantage by the quality, efficiency, depth, and relevance of the learning they produce in students. And this advantage will be achieved only through dedicated teachers.

Failure of current MOOC business models

Institutions are beginning to see some revenue generated from their MOOC efforts. Yet these revenue streams are not sufficient to sustain the organiza-

tions that pay for them or for the institutions themselves to continue their efforts. In April 2013 Coursera distributed $220,000 to universities (Rivard, 2013) based on payments received for its learning assessment process. By July 2013 the total revenue had grown to $800,000 (Kolowich, 2013). Income streams derived from credit granting, learning assessments, and certifications are the most logical way of "monetizing" the MOOC model. While it is possible that sheer scale could produce a business model based on certification that is capable of sustaining the MOOC enterprise, threats from competition and other forces make dependence on this source of income problematic. Other suggested revenue sources are placement services, licensing of content, and the profits from related services and goods (tutoring and books). Institutional resistance will make it unlikely to generate income from advertising or selling student data for marketing purposes. Institutions will need to find models to sustain their investments in MOOCs and other forms of OER. Models will arise as the advantages of open material for institutional prestige, recognition, and support of income-generating activities become more apparent. Whether these institutional purposes involve third-party organizations such as Coursera and edX remains to be seen.

Prediction: Higher educational institutions will use OER, OCW, and MOOCs in conjunction with broadly conceived strategic goals to justify financial investment in the development, dissemination, and use of open material.

MOOCs as markets and innovation disseminators

Most commentators do not realize the potential of MOOCs. For instance, most MOOC students are not enrolled anywhere else; they are "self learners." The majority of the first MOOC students were from outside the US. MOOCs are more like textbooks and less like complete online courses. Current observers and prognosticators see MOOCs as disseminating content in the form of OCW for the benefit of learners and they concentrate on the appeal of large numbers when in fact MOOCs are likely to get smaller as more of them are offered through more channels. MOOC quality is likely to decrease and the differences between massive courses and fully online courses will become more obvious.

What is missed amidst this confusion is the ultimate and real value of OER, OCW, and MOOCs. First, the opening of educational material to educators and students worldwide represents the creation of a marketplace for high quality content. The most impactful use of MOOC content is in the form of institutionally sponsored courses, where many more students can

be served. Its adopters can improve open content as they create a dynamic process of adding value in the form of improvements or "localization" for specific audiences. Second, MOOC channels will be disseminators not only of content but also learning innovation. New instructional technologies and their innovative use can be immediately transferred around the world, validated over thousands of students, and evaluated across many cultures and circumstances. Against these two potentials of MOOCs, all others, particularly the potential for income generation, fade. Educators are under the obligation to make these two positive predictions real.

Prediction: MOOCs will provide a marketplace for both content and learning innovation that is capable of improving the economic and social well being of the world.

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