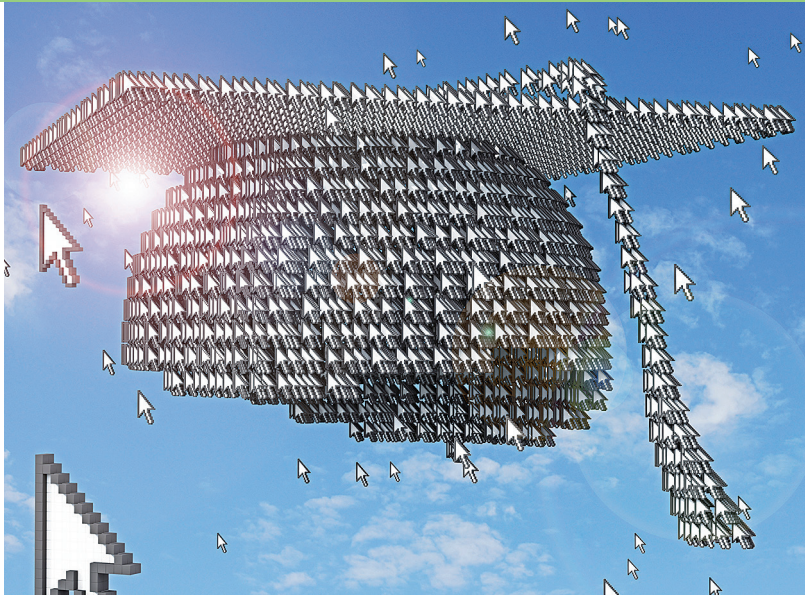


MOOCS COME BACK TO EARTH PEDAGOGIC REALITY IS REPLACING EARLY HYPE



In 2011, Stanford computer scientists Sebastian Thrun and Peter Norvig came up with the bright idea of streaming their robotics lectures on demand over the Internet, and letting anyone sign up and participate in the coursework. When more than 160,000 enrolled, the professors thought they had a tiger by the tail. The MOOC—massive open online course—had arrived. To date, about 58 million people have signed up for MOOCs.

Thrun promptly cofounded Udacity to commercialize MOOCs. He predicted that in 50 years, streaming lectures would so subvert face-to-face education that only 10 higher-education institutions would remain. Campuses would become obsolete, replaced by “star” faculty streaming to screens all over the world.

MOOC pioneers were therefore stunned when their courses didn’t perform anything like they had expected. At first, the average completion rate for MOOCs was less than 7 percent. Completion rates have since gone up a bit, to a median of about 12.6 percent, although there’s considerable variation. While a number of fac-

tors contribute to the completion rate, most of those who did finish a MOOC were accomplished learners, many with advanced degrees. My own observation, at New York University, is that students who have to pay a fee to enroll tend to be more committed to finishing.

What accounts for MOOCs’ modest performance? While the technological solution they devised was novel, most MOOC innovators were unfamiliar with key educational trends. The first MOOCs replicated the standard lecture, an uninspiring teaching style, but one with which the computer scientists were familiar. Most MOOC founders were unaware of the pedagogical revolution already under way: The traditional university lecture was being rejected by many scholars, practitioners, and, most tellingly, tech-savvy students. MOOC advocates also failed to appreciate the existing body of knowledge about learning online, built over the last couple of decades by adventurous faculty who were attracted to online teaching for its innovative potential, such as peer-to-peer learning, virtual teamwork, and interactive exercises. These modes

of instruction, known collectively as “active” learning, encourage student engagement rather than passive listening in lectures.

The impact of active learning can be significant. In a 2014 meta-analysis published in *Proceedings of the National Academy of Sciences*, researchers looked at 225 studies in which standard lectures were compared with active learning for undergraduate science, math, and engineering. Average test scores went up about 6 percent in active-learning sections, while students in traditional lecture classes were 1.5 times as likely to fail as their peers in active-learning classes.

Even lectures by star faculty were no match for active-learning sections taught by novice instructors: Students still performed better in active classes. “We’ve yet to see any evidence that celebrated lecturers can help students more than even first-generation active learning does,” Scott Freeman, the lead author of the study, told *Wired*.

Unfortunately, early MOOCs failed to incorporate active learning approaches or any of the other innovations in teaching and learning common in other online courses. The three principal MOOC providers—Coursera, edX, and Udacity—wandered into a territory they thought was uninhabited. It’s telling that in their latest offerings, these vendors have introduced a number of active-learning innovations.

To be sure, MOOCs have been wildly successful in giving millions of people all over the world access to a wide range of subjects presented by eminent scholars at the world’s elite schools. Some courses attract so many students that a 7 percent completion rate still translates into thousands of students finishing.

But MOOC pioneers were presumptuous to imagine they could topple the university. They erroneously assumed they could open the minds of millions who were unprepared to tackle sophisticated curricula. MOOCs will never sweep away face-to-face classrooms, nor can they take the place of more intensive and intimate online degree programs. The real contribution of MOOCs is likely to be much more modest, as yet another digital education option. —ROBERT UBELL

An extended version of this article is online.