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UCI dean: Open education is essential

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Open and free education has become a permanent fixture of higher education. Every major university in the world will soon create and use online curricula, allowing people around the world to learn and thrive. What's more, universities and colleges will need open education to remain vital and relevant.

For those of us who have been active in the Open Educational Resources and OpenCourseWare movements, the question now becomes: Will universities be able to muster the institutional resources and willingness to adopt free and open practices and technologies? At UC Irvine, we believe it is essential. Here's how we're leading the way.

In 2001, UCI received the first in a series of more than $1 million in grants from the Hewlett Foundation to advance open education. In 2006 we established a website that now offers more than 93 open courses and more than 800 video lectures. As a charter member, UCI joined the OCW Consortium, which now offers 30,000-plus open courses from 281 institutions around the world. At the same time, iTunes U and YouTube provided institutions with the ability to publish courses on their sites. This huge store of free university classes created a gravitational pull, but it needed a catalyst to be taken seriously.

That catalyst occurred in 2011 when professor Sebastian Thrun from Stanford University offered the first publically recognized massive open online course, or MOOC, in artificial intelligence that enrolled more than 160,000 students. Within six months, three venture-based organizations, including Coursera, Udacity and edX were established to exploit this new phenomenon of open education. UC Irvine became one of the first 33 top-tier universities to partner with Coursera last September. By January our six Coursera courses had enrolled more than 250,000 students.

It is little wonder that last month Darrell Steinberg, president pro tem of the California Senate, introduced SB520, which if passed could compel California state colleges and universities to accept credit for MOOCs. The Legislature sees these courses as an answer to overcrowding and higher costs in public higher education – a free resource, generated by the top universities. The leaders of the three California systems (UC, CSU and community colleges) tentatively supported Steinberg's initiative, while faculty members generally remained skeptical, asserting the bill would intrude on the academic integrity of degree programs.

Lost in the MOOC controversy are the much more profound and highly positive effects the courses will have on learning opportunities for millions of people around the world. Students will soon be able to find and use a full curriculum rather than individual courses. Early last month, for example, UCI's chemistry department made its entire undergraduate curriculum in chemistry available on YouTube. Prospective and current UC students can now review or preview the experience of a UC chemistry class. Professor James Nowick's class has reached participants from India, Ethiopia and Botswana.

An earlier example of the power of open learning incorporated what is now called adaptive learning. With funding from the Hewlett Foundation, UCI created a program for teachers studying for the California CSET exams, which qualifies them to teach high school math and science. These in-depth tutorials provided exam-takers with customized learning pathways, shaped by their own prior levels of knowledge and gaps, to master the CSET test requirements. Thousands of teachers have taken advantage of this resource.

These initiatives are just the beginning. With larger cohorts of learners enrolled in MOOCs and more, we will be able to use "big data" to analyze learning patterns to improve and customize instruction based on learning problems experienced and resolved by many students. We will use analytics to predict student outcomes as early as the first week in a course, so we can provide timely interventions to help students stay on track. Our goal will be to have every enrolled student get – and deserve – an A+ in every introductory course through the use of new technologies and guidance provided by great faculty.

Gary Matkin is dean of continuing education, distance learning and summer session for UC Irvine and is a nationally recognized expert in those areas. He created the University of California's first online degree program – a master's in criminology, law and society – at UCI.