

Remember the MOOCs? After Near-Death, They're Booming

The pioneering online learning networks offer hard-earned lessons for what works and what doesn't with online education.



By **Steve Lohr**

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Sandeep Gupta, a technology manager in California, sees the economic storm caused by the coronavirus as a time “to try to future-proof your working life.” So he is taking an online course in artificial intelligence.

Dr. Robert Davidson, an emergency-room physician in Michigan, says the pandemic has cast “a glaring light on the shortcomings of our public health infrastructure.” So he is pursuing an online master’s degree in public health.

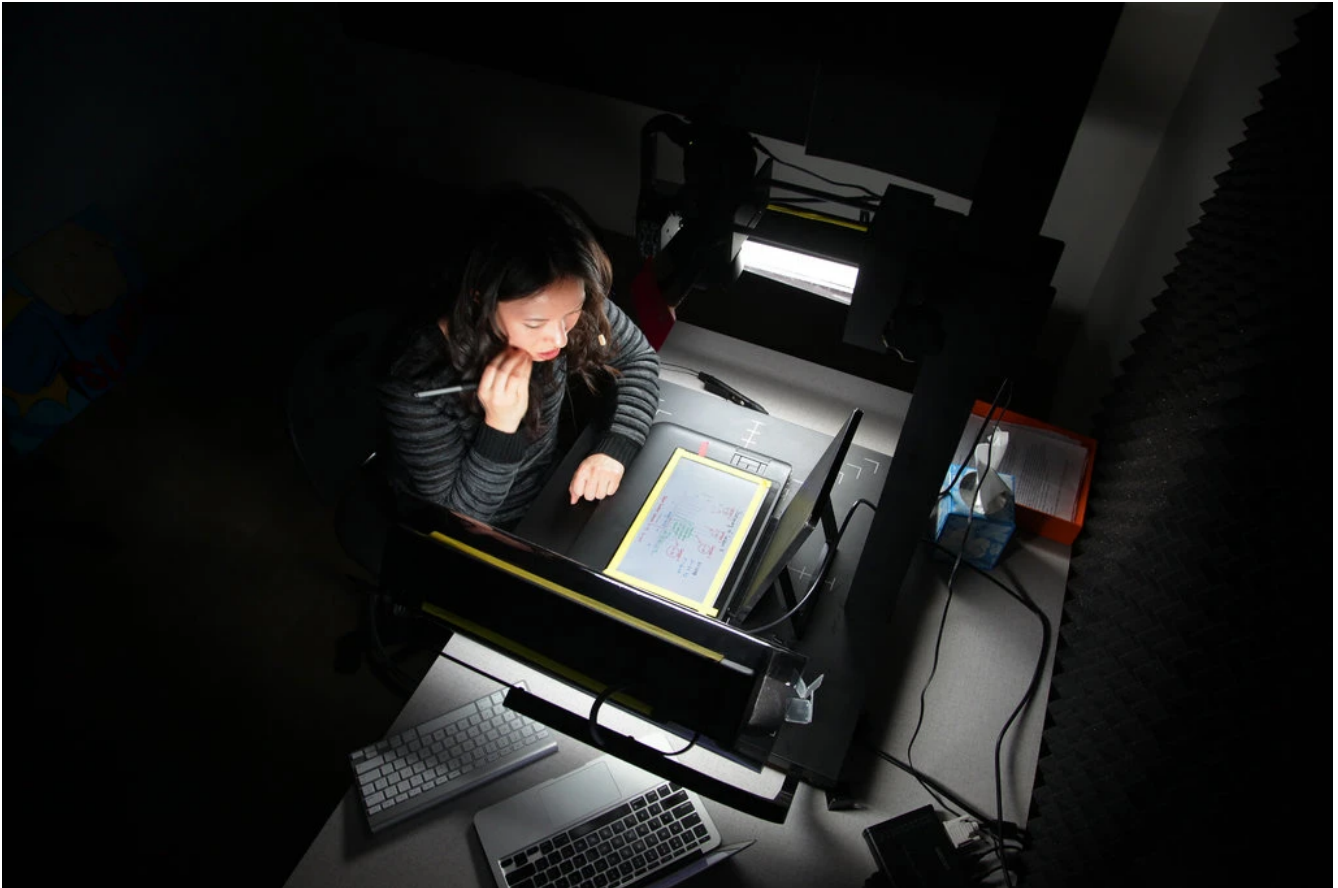
Children and college students aren’t the only ones turning to online education during the coronavirus pandemic. Millions of adults have signed up for online classes in the last two months, too — a jolt that could signal a renaissance for big online learning networks that had struggled for years.

Coursera, in which Mr. Gupta and Dr. Davidson enrolled, added 10 million new users from mid-March to mid-May, seven times the pace of new sign-ups in the previous year. Enrollments at edX and Udacity, two smaller education sites, have jumped by similar multiples.

“Crises lead to accelerations, and this is best chance ever for online learning,” said Sebastian Thrun, a co-founder and chairman of Udacity.

Coursera, Udacity and edX sprang up nearly a decade ago as high-profile university experiments known as MOOCs, for massive open online courses. They were portrayed as tech-fueled insurgents destined to disrupt the antiquated ways of traditional higher education. But few people completed courses, grappling with the same challenges now facing students forced into distance learning because of the pandemic. Screen fatigue sets in, and attention strays.

The sites even became a punchline among academics: “Remember the MOOCs?”



Katie Kormanik preparing to record a statistics course on Udacity. Jim Wilson/The New York Times

But the online ventures adapted through trial and error, gathering lessons that could provide a road map for schools districts and universities pushed online. The instructional ingredients of success, the sites found, include short videos of six minutes or less, interspersed with interactive drills and tests; online forums where students share problems and suggestions; and online mentoring and tutoring.

“Active learning works, and social learning works,” said Anant Agarwal, founder and chief executive of edX. “And you have to understand that teaching online and learning online are skills of their own.”

The proclaimed mission of the MOOCs was to “democratize education.” The early courses attracted hundreds of thousands of students from around the world.

Udacity and Coursera were founded at Stanford University by high-profile professors in the hot field of artificial intelligence. EdX, created by the Massachusetts Institute of Technology and Harvard University in 2012, is a nonprofit.

Coursera and Udacity soon attracted money from Silicon Valley’s leading venture firms. The courses were all free. It was the classic internet formula: lure a big audience, and figure out a business model later.

Executives eventually discovered that earning credentials for completing courses and paying fees drove completion rates far higher. Typically, 10 percent or fewer students complete free courses, while the completion rates for paid courses that grant certificates or degrees range from 40 percent to 90 percent.

A few top-tier universities, such as the University of Michigan and the Georgia Institute of Technology, offer some full degree programs through the online platforms. Dr. Davidson is taking Michigan’s public health course.



Coursera added 10 million new users from mid-March to mid-May. Jessica Chou for The New York Times

While those academic programs are available, the online schools have tilted, either cautiously or wholeheartedly, toward skills-focused courses that match student demand and hiring trends.

“Our main goal is to solve learning, not the skills problem,” Mr. Agarwal said. “Though frankly, that’s where the money is.”

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Udacity has made the most drastic transformation toward a skills factory. It has developed dozens of courses on its own and with corporate collaborators including Google, Amazon and Mercedes. Its course offerings are largely in digital skills like programming, data science and artificial intelligence, fields where companies say they need workers.

“Companies are better positioned to see where the jobs of tomorrow will be and prepare people for them than universities,” Mr. Thrun said.

Just a couple of years ago, Udacity’s survival was in doubt. When Mr. Thrun returned to oversee operations in 2018, it was a few months from running out of cash. Over the next two years, Mr. Thrun laid off about half the work force. “The worst period of my life,” he recalled.

Today, with 320 employees and 1,300 part-time project reviewers and mentors, Udacity’s fortunes have improved. It is tightly focused on its training business, for both individual students and for corporations that pay Udacity to upgrade the skills of their employees and to advise them on redeploying workers in digital operations.

The Udacity courses, which it calls nanodegrees, take most students four to six months to complete, if they put in 10 hours a week. The average cost is \$1,200. The learning is based on projects, rapid feedback — including project reviews in two hours — and online mentoring.

David Hundley has taken several Udacity courses in data science and machine learning in the last two years. A business analyst at State Farm, he wanted to develop tech skills for a better job and brighter career prospects.

Today, Mr. Hundley, 30, is proficient in modern software tools like Python and TensorFlow and has a portfolio of projects on GitHub, where software developers display their work. In January, he landed a new job at the insurance company as a machine-learning engineer.

State Farm paid for a couple of the Udacity courses, and he paid for the others. “It was a hundred-percent worth it,” Mr. Hundley said. “Two years ago, I didn’t know anything about coding. Now, I’m a machine-learning engineer.”

Coursera is a hybrid, retaining much of the character of the original MOOCs, while striving to build a sizable business.

The Coronavirus Outbreak ■

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Updated May 26, 2020

- **How can I protect myself while flying?**

If air travel is unavoidable, there are some steps you can take to protect yourself. Most important: Wash your hands often, and stop touching your face. If possible, choose a window seat. A study from Emory University found that during flu season, the safest place to sit on a plane is by a window, as people sitting in window seats had less contact with potentially sick people. Disinfect hard surfaces. When you get to your seat and your hands are clean, use disinfecting wipes

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Coursera has raised more than \$300 million in venture funding over the years. It hosts more than 4,000 courses, created mainly by university professors but also by companies like Google and IBM. The certificate courses are typically priced at \$39 to \$79 a month, or a \$399 annual fee. University master’s degree programs start at \$15,000 and go up to \$40,000.

But fewer than 10 percent of Coursera students pay for courses; they take them free. That is part of the company’s mixed model of offering both free and paid-for learning options, said Jeff Maggioncalda, chief executive of Coursera, noting that 60 percent of students in its degree programs try free courses first.

Some of the most popular courses are not about writing code or making money. The breakout hit of the pandemic season is “The Science of Well-Being” by Laurie Santos, a professor of psychology at Yale University.



Jeff Maggioncalda, chief executive of Coursera. Jessica Chou for The New York Times

Mr. Maggioncalda describes Coursera as a “managed marketplace,” similar in concept to Apple’s app store. Coursera determines which institutions get to publish courses on its platform, and has rules and guidelines for format standards and price ranges. For degree courses, universities collect 60 percent of the revenue and Coursera 40 percent. On certificate courses, mainly in technology and business subjects, the split is 50-50.

The millions of people flocking to take courses on Coursera in recent weeks suggest the brand value of its learning network. About half the company’s 600 employees are product managers, engineers and data scientists, working to improve the online learning experience and more effectively market the university courses.

Before the pandemic hit, Coursera projected growth of 30 percent this year, to more than \$200 million. That forecast looks decidedly outdated, given the surge in the last two months, but how long the trend lasts is uncertain.

The Covid-19 effect on online learning could broaden the range of popular subjects, education experts say. But so far, training for the tech economy is where the digital-learning money lies. With more of work and everyday life moving online — some of it permanently — that will probably not change.

“Digital-skills jobs will be where there is greatest demand,” Mr. Maggioncalda said, “and those jobs will be less likely to be affected by pandemics in the future.”