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Disruptive innovation
Case study: K-12 education

"At least two-thirds of U.S. students will be doing most of their learning online by 2020."

Tom Vander Ark, CEO of Open Education Solutions

Today's students have more choices in classes, better facilities and a wider variety of learning experiences than ever before. But the fundamental way in which most children are taught has not changed significantly in more than a century. And while education has become considerably more expensive, it has failed to achieve a corresponding increase in performance.

Breaking the trade-off

The tradeoff schools have faced is between the kind of standardized teaching that occurs in most public-school classrooms and the more personalized instruction a student might receive from a tutor or at an elite prep school. Smaller class sizes, smaller schools, "schools within schools" and other reforms all reflect attempts to move up the performance curve. The trade-off, however, is that such reforms typically are quite expensive.

Online learning, or a blended learning environment of digital learning and traditional instruction, may be capable of breaking this trade-off. How? By *personalizing* the learning experience according to individual student learning styles and pace, and doing so without increasing the number of teachers. Within five years, most learning platforms will have a smart recommendation engine similar to iTunes Genius that can create customized learning experiences, predicts Tom Vander Ark, CEO of Open Education Solutions.[1] These new, customized learning systems typically are based in the "cloud" and accessible to students anywhere.

Pace of disruption

Thanks in part to much greater capabilities, today's online learning courses are moving rapidly from test preparation and correspondence classes into mainstream education. More than 4 million students at the K-12 level took an online course in 2011, up significantly from just 1 million three years earlier.[2] About 250,000 U.S. students attend online schools full time, mostly through virtual charter schools.[3]

The Innosight Institute predicts that the pace that online learning substitutes for live classroom instruction will increase dramatically in the next decade. In 2008, they estimated that by 2019, American high school students will take *50 percent* of their courses online.[4] This was a bold prediction, to say the least. If the current 46 percent annual growth rates in online learning continue, however, it may prove too conservative. Vander Ark predicts that at least two-thirds of U.S. students will be doing most of their learning online by 2020.[5] That would indeed be quite a disruption.

The Khan Academy's disruptive model

One of the most disruptive education models started off as Salman Khan's side project to provide tutoring help to his cousins, nephews and nieces. The simple but effective math and science videos Khan posted to YouTube quickly went viral as thousands and then millions of students started to watch. All told, Khan's now world-renowned online learning academy has delivered more than 30 million lessons to students around the world.[6]

The 2,700 online course modules offered by the Khan Academy range from math and science to art history to banking and money. Each lesson is free and open to anyone. With the help of philanthropic supporters, Khan's tiny six person team has steadily moved Khan Academy up the performance curve. The website now includes a sophisticated analytics engine that allows teachers and parents to track student progress through experience points gained as the students master various subjects.[7] The five years' worth of data Khan now has on how students learn could eventually enable the Academy to create lessons personalized to each students' learning.

At least 36 schools have incorporated Khan Academy videos and teacher dashboards that track students' individual statistics into their teaching model.[8] The Los Altos school district in northern California uses the Khan videos to "flip" some of their classrooms: students watch the taped Khan lectures for homework so teachers can spend class time working one-on-one with students, helping them work through tough questions.[9] Teachers in hundreds of other schools similarly use online tools to flip their classrooms and deliver more customized instruction.

Endnotes

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3. John Watson, Amy Murin, Lauren Vashaw, Butch Gemin, Chris Rapp, "Keeping Pace with K-12 Online Learning: An Annual Review of Policy and Practice," Evergreen Education Group, 2011 < http://kpk12.com/cms/wp-content/uploads/KeepingPace2011.pdf>
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7. Ibid.
8. Somini Sengupta, "Online, personalized," *The New York Times*, December 4, 2011. <http://www.nytimes.com/2011/12/05/technology/khan-academy-blends-its-youtube-approach-with-classrooms.html?pagewanted=all>
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For more information, please contact:

William Eggers
Global Research Director
Public Sector
Deloitte Services LP
Washington, DC
+1 571 882 6585
weggers@deloitte.com

Laura Baker
Senior Consultant
Deloitte Consulting LLP
+1 571 882 6031
labaker@deloitte.com

Ruben Gonzalez
Consultant
Deloitte Consulting LLP
+1 571 814 7422
rugonzalez@deloitte.com

Audrey Vaughn
Senior Consultant
Deloitte Consulting LLP
+1 571 814 6899
avaughn@deloitte.com