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Education for everyone: An interview with Sal Khan

Online learning is revolutionizing access to education. As Khan Academy founder Sal Khan explains, it may also revolutionize how organizations find the workers they need.

Sal Khan began tutoring his cousin using online videos in 2004, and demand from relatives and friends prompted him to create a YouTube channel in 2006 to distribute his lessons. Three years and millions of views later, Khan left his career as a hedge-fund analyst to concentrate on developing the Khan Academy, a not-for-profit that offers free online education on a variety of subjects. In this interview with James Manyika, a director in McKinsey's San Francisco office, Khan explains how online learning complements rather than competes with traditional education and why expanding access helps individuals learn the skills companies need. The following is an edited transcript of his remarks.

Personalized learning

Whenever people imagine virtual something, they sometimes put it at odds with the physical incarnation of it. That is exactly not what we imagine when we think of Khan Academy. When we think of Khan Academy, yes, if you have nothing, if you are a villager in some rural part of India and you have no school, hopefully we can get a device out to you and then get you access. We can help you learn and move up your knowledge edge.

But the ideal is you have a physical environment. You have inspiring mentors and adults and teachers around you. You have your peers around you in a social environment. And in that context, we see ourselves as a tool to enable really personalized instruction. That ability to move to a competency-based model as opposed to a seat-time model, that ability to move to a differentiated model as opposed to a one-pace-fits-all model is really a necessary ingredient to actually moving the dial. At the end of the day, we are a tool to empower teachers. And it is up to the teacher to decide how that tool is used.

Big data in education

In the Internet world, there's this phenomenon of A/B testing, where, "Hey, you want people to click 'purchase' on your e-commerce store? Well, why don't you have 5 percent of your users see a slightly different button? Instead of saying 'buy now,' it says 'I want this.' And see, does that increase purchases? Does that decrease purchases? Does it have other side effects?"

We get to now do that same type of thing, but not with trying to get someone to buy a widget. Instead, we test to make sure that they get engaged with the material, to make sure that they get proficient in the material, and to try to see if they retain the material.

We are running experiments about if you explain a concept—seeing negative exponents in a different way, using certain text or not using certain text—how does it affect how quickly a student gets to proficiency? How does it affect their attention one week later, two weeks later, their actual forgetting curve? We do a 5 percent study, we get 40,000 data points by tomorrow, which is unheard of in the traditional world. And we can control for all sorts of things and we can measure all sorts of variables.

Solving the skills gap

A lot of people talk about structural unemployment. "Hey, there's all these people who say they can't find employees, and then you have all these people who can't find jobs." And most people say it's a skills gap. And the solution that's usually given out is, "Oh, we need to send them to community college to pick up some trade or to learn IT, whatever it might be." The real problem is that it's a signaling gap.

And so if you're a laid-off factory worker, you're 40 or 50 years old, even if you go to the community college right now it's very hard for you to prove that your brain is still plastic, that you have what it takes. But if there was a way that you could take an assessment—and it could be paper-based, it could be a practical assessment, it could be an oral exam—where you could show that you can write well, that your brain is still plastic, that you're a critical thinker, that you have some computer skill, whatever it might be, then employers say, "Wow, objectively that person is as good as a new college grad." Or if you're a community-college student and you've worked your way through college, you can prove that you're just as good as the Harvard grad, or better.

If on top of that you can create data, "Look, people who do well on this," you create the pipeline. "These are the employers that care about it, these are the salaries they're making, this is the probability of success, et cetera, et cetera." You can really start to streamline the signaling problem and the employment problem.

I would tell CEOs, "Be creative, don't just have the inertia of what your predecessors did, of looking at the resume book from an Ivy League school." Not only are you not going to get the best results, it's actually not fair, because there's a lot of good people out there. You just have to figure out how to discover them.

But I think if the Department of Education or someone else isn't going to create some type of competency-based mechanism, you can. Especially a large organization, they would have the clout. Form a consortium with your competitors to find the talent in petroleum engineering, in software engineering, whatever it might be.

The US innovation advantage

For me, the issue of how many STEM[1] graduates we have, it's not a competition issue versus China or India. And yes, it's true, they are churning out STEM graduates. I'm actually not afraid of America losing its leadership here. We have all these doom-and-gloom arguments about America losing its primacy and all this stuff about our math scores. But if you take a serious look over the last 30 or 40 years, if you said, "What are the most innovative companies in the world? Where is the innovation happening?" And if you just follow and ask that question, year after year after year, it's getting more and more focused in America. In fact, it's getting more and more focused around a ten-square-mile radius right around here. And so I'd argue Silicon Valley is frankly the most American part of America. It's entrepreneurial, it's creative, and those are the important things—that's where innovation really happens.

I always joke—well, I don't joke, it's true. Defining the ability to do a math problem as your ability to innovate is like measuring an artist by how well they mix paint, or a dancer by how flexible they are. It's a necessary condition, it's something that you need, a tool to express yourself, but it's not what takes you to the innovation, and that's why you see so much. The innovation is in our culture despite the fact that we have a Prussian education system. □

[1] Science, technology, engineering, and mathematics.

Sal Khan is the founder and executive director of Khan Academy. This interview was conducted by **James Manyika,** a director in McKinsey's San Francisco office.