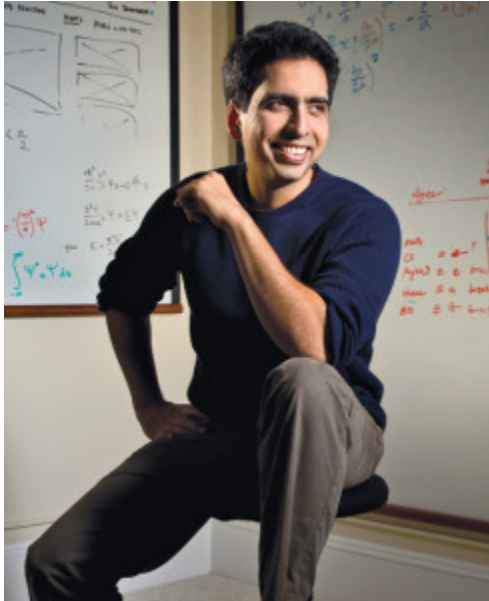


## Salman Khan, the Most Influential Person in Education Technology (Jan 14)



Salman Khan of Khan Academy

I have had the good fortune of speaking with good number of the leaders in education technology today. Since so many of these players have emerged from academe, the competition between companies is fierce certainly, but there is also a collegial willingness to acknowledge the successes of other companies. In the case of non-profits like edX, CEO Anant Agarwal says, the more companies that enter this space, the merrier. (Stay tuned for my interview with Agarwal on January 20th.) Several of these leaders acknowledge that the most influential person to the MOOC landscape has been Salman Khan. As Agarwal lists the genesis of the MOOCs, he lists Khan and his Khan Academy first among the major players. Sebastian Thrun acknowledged [in my interview with him](#) that “I stumbled into this after listening to a gentleman named Sal Khan of Khan Academy. In his speech he noted that he had tens of millions of students in his classes. I was teaching at Stanford at the time and had tens of dozens of students in my classes, and I felt I should try something different and see if we could do what I do and scale it to many people.” In fact, [in my podcast interview with Thrun](#), as he listed those who had been most influential to him over the course of his career, he listed Khan on the short list.

With this in mind, I looked forward to meeting this education guru. I met him in his office, and had a chance to see the microphone he uses for the tutorials that he delivers. He was informal, dressed in a t-shirt and shorts, and the microphone that I used to record our podcast interview was perched on a log that stood in between us. He was affable, bright, and the leadership skills that enabled him to be class president of his senior class at MIT and of his class at Harvard Business School before becoming a serial entrepreneur was quite clear. What followed as a fascinating conversation about the genesis of Khan Academy, his thoughts on the future of education, and his beliefs about the balance between technology enabled learning versus classroom learning.

(To listen to an extended audio interview with Salman Khan, visit [this link](#).)

**Peter High:** Sal, there is the famous story of your cousin, Nadia, who needed some help with her math class in seventh grade as the genesis of the idea that has become Khan Academy. What insights in the early days helped you understand the scale of the need that you hoped to fill?

**Salman Khan:** I grew up with plenty of smart people. They would beat me at chess, they could solve brain teasers before I could, but then they would struggle in algebra. These were incredibly smart people who simply did not have the foundation in math that I had. I saw the same thing with my cousin, Nadia. She had actually gotten “A”s and “B”s in every math class. Despite that, she had some serious gaps in her knowledge that became more significant as the content became more difficult. This really hit me as a real opportunity.

My background is in software, and I have always had these romantic notions of starting writing software that could help people learn, so I started writing a little tool that would give Nadia and her brothers and the other people I was working with practice problems. I didn’t trust them when they said how long it took them or whatever else. I put a database behind it and that became a useful tutorial tool because I could see where they had gaps, I could intervene appropriately, and I could give them as much practice as they needed.

I realized that I had an issue with scaling this. The software was appropriate for tens of people, but video together with analytics connecting the software to the videos would be necessary to take it to the next level. So I started doing those to complement the software idea, and they took on a life of their own and it reinforced that there was a need that was not being met effectively.

I realized that there are many people who are very good students, but they think of themselves as bad students. At the end of the day what they are really missing is way to understand where their gaps are and a way to address those gaps. The problem is by the time you are in algebra class and if you are a little shaky on decimals, there has not been a good way to address that traditionally. The class is going to move on.

**PH:** What feedback did you get from students in the early days that helped you determine how to shape the company and its offering?

**SK:** Some of the strongest testimonials that I got back in the early days were from students who indicated that they thought they were simply bad at a given subject, and they were on the verge of giving up hope when they found our videos. This has been inspiring to me. A member of our team failed calculus three or four times and dropped out of college because of it. Later he embarked on a successful IT career and got to the point where he had to re-learn calculus. He did so using Khan Academy. He joined our team and now is one of our top engineers. He didn’t realize he had all these gaps in his formative mathematics and that was what was keeping him passing calculus. It is not about smart or not-smart, or motivated or demotivated; it is a lot about how strong your foundation is, and how confident you are. One’s perception of themselves has a much bigger role than has been acknowledged to determine who succeeds and who does not.

**PH:** Do you anticipate a point at which Khan Academy or other comparable companies will change the way in which teaching is done in the classroom?

**SK:** I don’t think we are a threat or competition to traditional education in any way. This is not Amazon.com versus Barnes & Noble. We don’t believe that you should ever replace physical education. Even in a thousand years, a computer will never be able to do so.

Before the Prussians came up with the current educational model 200 years ago, the only people who got an education were the elite, the nobility and usually only the male nobility. So the Prussian model has served us incredibly well, democratizing education, and allowing us to have it at an industrial scale, so to speak.

As we ask, “What is the ideal experience?” The physical classroom should be changed such that learning is not as passive an experience as it has been traditionally. Students shouldn’t just be listening to a lecture; they should be interacting with peers; they should be working at their own pace; they shouldn’t be

isolated from people who are more advanced than they are or people who are less advanced than they are. We ought to use these as opportunities to mentor other people and be mentored by others. This is where Khan Academy comes in. If the computer can give them the right problems at the right time and give the teacher feedback; well, then teachers don't have to use time for homework review.

**PH:** In the early days, you performed all lessons. Needless to say, that is not a scalable model. What was the process of expanding beyond you?

**SK:** In the early days, there was such a direct need for my cousins and then once I started, I realized how much I enjoyed making the videos. I started with algebra and enjoyed that. I then moved on to trigonometry. Next, I did geometry. I eventually got pre-algebra. It kept growing and growing, and it was one of the best intellectual adventures for me. I viewed this as a challenge. I am not a chemist, but I understood chemistry at one point. I delved back into the books I used in school. I moved on to history.

The company is called Khan Academy and I kind of cringe sometimes because it was literally almost a joke. It makes it sound like a major institution, and it is no longer just me, of course. In 2006, the name was kind of a joke, and I did not quit my job until 2009. In 2010, we set up as a not-for-profit. In 2010, we had our first real funding from Gates foundation and Google. We could get office space and hire people. We have more than 40 people now. Three-fourths of them are software engineers.

As you mentioned, I can no longer do everything, even for the things I have done, it is probably not ideal for everyone. We want other voices and other ways of thinking. I have focused on bringing in new people who have a similar enthusiasm and sensibility.

**PH:** How do you compare Khan Academy to the other prominent MOOCs like edX, Udacity, or Coursera?

**SK:** We have some comparable content and people from the same universities that they have signed up. We have Stanford Medical School content on Khan Academy for instance. So it isn't where the content is coming from or who is making it. It is more of how the content is expected to be consumed and what it means to consume it. As other MOOCs move toward accreditation, there may be the perception that it is replacing the physical educational environment. As I mentioned earlier, we explicitly do not intend to do so. With some other courses, there is the perception that "Well, this is the Harvard course." I think the risk there is that you know the reality— is it is not the Harvard course.

The other distinction is attempting to virtualize a physical analogue. So there is something called a course today, but it starts on a certain date. It ends on a certain date. There are lectures, and there is homework. Then there is a project. Then there is an exam and everyone kind of moves together. That has advantages and disadvantages. The advantage is it does create a cohort like a fact. The disadvantage of kind of going together at the same pace is that it still is the kind of for like were depression model of education, where anytime you are forcing to people together at the same pace, it becomes a filter. It begs the question, "Who can keep up with this pace?"

Khan Academy can help you learn, but we are never going to say that we are somehow a replacement for a physical classroom. So that is why we have invested really heavily in teacher dashboards, teacher diagnostics. Teachers being able to assign exercises, it is coming out soon, so to some degree the teacher could use Khan Academy within their courses. However the teacher decides to do it. It is not a pre-packaged course for them. It could be asynchronous. We could be in the same classroom. You might work on negative exponents. I might work on fractal exponents. That is completely okay. So that is where I would draw some distinctions on how we operate.

We are also differentiated by our mission statement: A free world class education for anyone, anywhere.

**PH:** You mentioned your use of the dashboards that you are developing for teachers and the diagnostics that you are putting together to help them gauge progress to use an additional aid to determine how the

students are doing. What is on your own dashboard to determine whether Khan Academy is making appropriate progress?

**SK:** In Silicon Valley, growth is number one. You grow at all costs. That is what drives your valuation. We also believe that growth is important, as it means that we are adding value to people. But for us it is really about the average learning per user that we want to maximize and the way we think about that, well first we have to really invest in really strong diagnostic exercises assessments, because if we don't have those then there is no way of really measuring the impact that the videos or the text might have. So we are doing a very deep course right now and the common core, we are working with a lot of the common core groups you know to make sure that we are really going deep, really doing conceptually that when we are confident that a student is proficient at something We look at how well do we engage the user? How much time they spend? You know we are always running experiments. Five percent of the users see different little tweaks to the system to see if it engages them more. We look at what interventions get them to a proficient state faster.

I also did a very good job of hiring people smarter than myself across the organization. So we have some very, very good people who are thinking very seriously and working with third party researchers at universities and cognitive scientists to understand how we can measure learning and retention.

**PH:** You mentioned that your mission is to provide free world class education for anyone, anywhere. The key is that the courses are free — so on flip side of that, what is the revenue model? How do you see yourself continuing to be able to afford this strong talent as you continue to scale the business?

**SK:** Right now our total budget is about the same budget as a medium size high school, and we are reaching millions of students. I think the social return on investment will continue to be compelling to philanthropists and foundations. As we grow, hopefully less of my time will be spent on fundraising, and more will be spent trying to make the experience on Khan Academy better and deeper. To do so, we are licensing content to some for-profits that are trying to use it in some commercial way. We are open to that as long as our brand is used in the right way. We started to do some brand partnerships; so the most famous one is with Bank of America. If you walk into Bank of America now you will see a little banner where they say, "Better money habits – a partnership with Khan Academy." They are using our video content on financial literacy and capital markets and accounting, for example. They have developed their own portal. Executives there have told us, "People trust Khan Academy, because you guys have built a brand here, and you are a not-for-profit." I was really impressed they genuinely are in this to educate their customers. It not just some type of a marketing ploy. These are example of reasons why I feel good that in five or six years, we won't have to be completely philanthropically supported.

I should mention that one thing that we have ruled out: we won't charge for learning. We won't put ads on the site. If we do that, it will mean the electricity is about to go off at our headquarters and we can't pay our bills.

**PH:** You have children of your own. How do you plan to use Khan Academy with them?

**SK:** My son is four. We normally say Khan Academy starts being kind of interesting for a third or fourth grader, but you know I was trying to work with that especially if you have, it is so important to have the human in the room that can get beyond where the technology really fails and we learned how we can fix the technology. I hope that in a couple of years, my son goes to a school where Khan Academy is part of the experience.

I hope that when he is six or seven or eight years old, he gets a chance to be tutored by his peers, to tutor his peers, to do projects with the teacher. I hope that he has time next to the teacher for one-on-one learning even if it is for 15 minutes a week, as opposed to five days per week of sitting in his chair, pretending that he is paying attention looking at the clock to see when class ends. It is just a very

unhealthy thing, especially for kids that young, where they want to move, they want to explore. They are naturally curious and it is almost that the traditional Prussian model suppresses that natural curiosity.

**PH:** You have had a chance to experience the American education system, you've been an entrepreneur in this space, and now you are parent to a young child entering it anew, have you thought much about education reform in our country?

**SK:** I really fundamentally believe that we need to move to a world where it is about competency. What level of competency do you have of algebra? And you know it is not okay to get a C in algebra, but it doesn't mean that you are a bad person or that you are not hardworking or not capable. It just means that you don't work on it harder, because no one is benefitting from you getting a C in algebra and then you going and taking algebra 2 or taking pre-calculus after that. It is much better for you to learn algebra at a reasonable level of proficiency. And so I would like to move to a world where you learn, how you see fit, it is personalized

The other reform is we want to see classrooms that are much more human. The people interact with each other. At the conclusion of my education, I should be able to prove to you that I am a critical thinker. I can prove to you that I can write. Here is my portfolio of creative work as evidence of this capability.

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