

Sal Man and the Future of Learning

He's Bill Gates' favorite teacher. The billionaire tech badshah uses Sal's online videos to tutor his children Jennifer, Rory and Phoebe. BusinessWeek magazine called him the "Math Moses," and Fortune listed him among 40 hottest business stars under 40. The journal Chronicle of Higher Education sees him as the pioneer of a potentially revolutionary "College 2.0" concept that may eventually upstage formal classroom education. Oh yeah, did we tell you his online lectures come out of a bedroom closet?

Salman "Sal" Khan, he of the online tutoring fame -- and not of the filmi notoriety one -- is shaking up the world of education. He's laughs when reminded of his Bollywood namesake, jokingly attributing the growing traffic towards his educational website (khanacademy.org) to film buffs straying during the search for their hero -- trying to get Dabangg for da buck. Instead, they stumble into a world of algebra and geometry, quadratic equations and binomial theorem. This is no celluloid experience; more likely they will hear a lecture on cellulite. There's nothing filmi about "Sal" Khan's videos. He's the sole hero, but you don't even get to see his face -- just intonation...and pristine intent.

Yet, his fan club, including Gates, finds them to be among the most engaging, compelling learning experience they have ever seen. One fan wrote to him saying, "It's the first time I've smiled while doing a derivative." Sal has hit on a magic formula for teaching and he wants to scale it many x. "We want to take learning away from the dehumanizing, one-size-fits-all teaching experience to 30 students packed in a classroom," he explains earnestly, "We want to create a global one-world class room..."

We, here, is the Khan Academy, his fledgling, not-for-profit online education venture that has already delivered some 86 million "lessons" (page views) as part of its mission to provide a "free, world-class education to anyone, anywhere." The free videos, each of which is seen by an average 20,000 people, range in subjects from function inverses to polynomials (and if you are not impressed by that), from stoichiometry to enthalpy.

Sal Khan's success in distance education has now made him a top draw in education gigs and mindfests in an America that is chafing at what it believes is its receding leadership in the knowledge business. It was Gates who first gave him a public boost at the Aspen Ideas Festival before chaperoning him onstage (and to the media center) at TED (Technology Engineering Design) conference in a session he curated. "It's amazing," gushed Gates to an enthralled audience, present company included. "I think you just got a glimpse of the education of the future."

After his talk and pow-wow with Gates, Sal is nattering with me, flanked by his wife Umaima Marvi, a physician, and Shantanu Sinha, President and COO of Khan Academy, who was Sal's college-mate and high school buddy. Out here at the Long Beach Performing Arts Center in California on a nippy March evening, there's a glow of academic and scholastic brilliance. We are meeting on the sidelines at the TED conference, dubbed the finest brain spa in the world, a gathering of the best minds of our life and times. From the inventor Dean Kamen (who passed away soon after the TED) to the investor Vinod Khosla, from the billionaire Bill Gates to the

brilliant Bobby McFerrin, this is a gathering of the world's intellectual elite, some of whom may also be uber-rich, but for whom money is not on top of their minds.

Sal and his cohorts are in good company. As we stand there, it crosses my mind that the trio stacks nearly a dozen college degrees between them. Sal has three from MIT (a BS in mathematics, a BS and an MS in electrical engineering and computer science) plus an MBA from Harvard. Shantanu, his math rival in high school, goes toe-to-toe with him -- four degrees from MIT. And Umaima is no academic slouch either, biology degree from MIT, Albert Einstein Medical Center, and post-doc at Stanford University. Phew. Talk of scholastic firepower.

But while the millionaire minds gathered at TED made their moolah before switching off, Sal and Co got off the beaten path well before the lolly began to roll in. Sal was a hedge fund analyst after his Harvard MBA and could have raked in riches when he opted to give himself a \$ 2000 per month salary to bring in revolutionary ideas into education. Asked how he funded his venture in the early days, Sal jokes about the "Khan capital" from his Bank of America checking account. Not that he's doesn't like money. Who doesn't when you have a young family and a mortgage? But cashing in his MBA cachet right off the bat wasn't a priority to a young man whose parents came from the poorest parts of India. One of the biggest cheers at his TED talk came when he confessed that "it was very strange for me to do something of social value."

But soon the money began to dribble in. As word of the videos began to spread, small donations began trickling in through PayPal, typically \$ 20 to \$ 100. Then one day, someone named Ann Doerr send in \$ 10,000. Doerr, Doerr, Doerr...the name rang a faint bell in Sal's mind...But we are getting ahead of the story here...

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Sal Khan's educational soiree began in the winter of 2004, when he had just finished his MBA, gotten married, and started working as a hedge fund analyst in Boston. It was a phone call from his seventh-grader cousin Nadia in New Orleans. She was having trouble placing into the pre-algebra class and wanted help with some problems. How about we do some remote tutoring after I come home from work and you come home from school? Sal told her, figuring he could teach her over the phone or even try it on instant messenger.

It worked sketchily even as Nadia's brother's Ali and Armaan joined the "classes." Struggling to schedule sessions between their soccer practice and his job, commute and new marriage, Sal hit upon a better idea. Why not record videos for them and put it on You Tube so they could watch it on their own time and at their own pace? Thusly was born the blueprint for Khan Academy.

If it sounds easier than it was, remember this was still the early days (2003) of online messengering and video. Sal had begun his long distance tutoring using Yahoo Doodle software as a shared notepad, but he and soon moved to Microsoft Paint and a piece of \$20 software called Screen Video Recorder, which let him capture his screen and record it at the same time. "It was the cheapest and fastest way to make a decent quality video," he recalls. Much later, one of his online followers donated a \$300 piece of software called Camtasia Recorder for the screen

capture to which he added a shareware called SmoothDraw 2.0 to draw and a little Wacom graphic pen tablet to do write.

Soon it wasn't just Sal's cousins but their classmates and friends who had joined in. Word spread. Other schools cottoned on to the online treat. So what was so special about Sal Khan's method that it caught on, especially when distance education and online tutoring had been around for some time? "Well, they told me they preferred me on You Tube than in person," Sal explained to the TED elite amid laughter. "But once you get over the backhanded nature of the compliment, there is something profound in that...it makes a ton of sense."

Now, his remote classroom could pause and repeat his instructions without irritating him. They could review it without being embarrassed they were asking him so repeat the lesson many times. They could review something they learned a week ago or a year ago. And then (says Sal) the least appreciated aspect of learning: The very first time you are trying to get brain around a new problem, the last thing you want is someone saying "do you understand this?"

Many education pundits who have reviewed Khan's website agree. Although he has some critics who compare his offering to "pedagogical McNuggets," (as one commentator put it) most reviewers maintain his style hits the "sweet spot of length and substance." Lectures are typically 10-15 minutes long, challenging the idea the traditional length of classroom lectures (an hour).

Khan himself is awed sometimes by what he has achieved. "With so little effort on my own part, I can empower an unlimited amount of people for all time. I can't imagine a better use of my time," he muses of his motivation. At other times, he wisecracks, "If Isaac Newton had done You Tube videos on calculus, I wouldn't have to...assuming he was good...we don't know."

In the nearly seven years since Sal's experimental videos went viral and evolved into the Khan Academy, the venture itself has metamorphosed and spread in directions that he never imagined when he started out of a closet as a one-man operation. After producing more than 2000 videos himself, Khan hired a SmartHistory team some months back to do videos outside STEM (Science, Technology, Engineering, Mathematics) areas that he himself did not have the verve to make. It is the first step towards enabling teachers to upload their own videos to Khan Academy by using the available analytics and tools. Next up: expanding the subjects covered to producing and offering videos in different languages to allowing teachers to create and customize their own curricula. "The deal will be, you can use our tools if we can put your stuff onto our noncommercial public domain," says Khan. "We don't know how it'll turn out, but we suspect there will be some amazing things put up."

And still there is no talk of money, or to put it in B-school jargon, on "monetizing the venture." Not that Sal is oblivious to the prospects ("The cost of supporting me is trivial...most schools landscaping budget is much greater than subscribing to a service," he told me, hinting at a future subscription-based model). But for now everything is still free, with VCs and AIs throwing money after him in a way that makes Ann Doerr's (wife of Silicon Valley's most famous VC John Doerr) initial donation look like a pittance.

In fact, Ann Doerr herself was shocked to know in the initial months that her \$ 10,000 check was the biggest donation. A typical Pay Pal donation, Sal explained to her over lunch (she invited him after he sent a thank you note, not knowing she is John Doerr's wife), is \$ 100. "This is, like, criminal," Doerr told him. "I love what you're doing." When he got home, he found a message from her: "There's \$100,000 in the mail."

Now the money is coming in millions. The most recent contribution of \$5 million came from the O'Sullivan Foundation. Reed Hastings, founder of Netflix donated \$3 million; Scott Cook, co-founder of Intuit, and his wife donated \$1 million; Google gave him \$2 million last year; and fanboy Bill Gates has donated more than \$5 million in total over the last few years.

All that is still a sideshow to Khan, who says his main goal right now is to ramp up content and create a "global one-world classroom," not loading up on the lolly. "I want to keep the site as serene as possible," he says, explaining the decision to largely abjure advertising dollars even before the millions came in from donations. For now, there's greater joy for him in being accosted at malls by desi boys asking for photographs with him. Not surprisingly, there is large amount of traffic to the Khan website from India, although the U.S still tops. The numbers are encouraging Khan to crank up the focus on the sub-continent, from talking to foundations to translate lectures into Hindi and Bengali to working with investor-philanthropist Mohnish Pabrai on JEE prep books.

It's small payback for the region his parents come from.