INFORMission Weekly



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SPECIAL ISSUE THE EDUCATION REVOLUTION

Our current education system is a little outdated – well, more than a little. It is virtually unchanged from the factory-model conceived in 19th century Prussia – 200 years old – in spite of science showing us how it can be improved. Innovation has been suppressed - even though the world has changed beyond imagination - But change is coming - not small, slow modification -but an education revolution is underway. So much change is taking place in the field – the coming of MOOCs (Massive Open Online Courses), that bring high quality higher education to everyone; the Khan Academy, leading a reform in teaching and learning; and 'flipping the classroom', a groundbreaking concept that changes the very basis of classroom learning. Nothing this big has taken place since education was invented 2,000 years ago by Socrates, and the school system evolved by his pupil Aristotle – the first school ever. It is all about **pushing the** horizons of education - doing the impossible, whether it's Sal Khan, Harvard in your home or like our leader to know, Beroz Vacha, educating the special ones. Sugata Mitra's vision to build a school in the cloud, Nicholas Negroponte's One Laptop Per Child educating and helping kids in poorest nations of the world– they are all changing education by bringing learning to those who could never have been educated before. Technology, that has changed every other part of our lives, is now changing education too – it's Learning in the Digital Age (as stated in the Scientific American) and we do believe it's the start of an Education Revolution

Flipping The Classroom



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Flipping The Classroom

The Flipped Classroom is probably the most exciting and most significant change taking place now—it challenges the entire way of thinking of the learning industry for the past 200 years. And the concept is just so, so simple—its amazing. When you 'flip' a classroom—homework takes the place of classwork, and classwork takes the place of homework. You first do your homework—read up

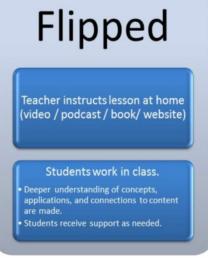
the lesson or watch your teacher's lecture online and then you come to school where you are helped by teachers with discussions. questions, exercises, and application of concepts - the stuff you really need help with is done in school. The classroom is for

interaction and engagement – and you get all your concepts clarified here, instead of the classroom being the lecture zone. What the "conventional " method currently prescribes is "discuss and get introduced to the topic in the classroom " and your homework is about "practice " and clarifying the concept ...which most of the time you don't get around to doing. To many, now, it really seems to make a whole lot of more sense and seems a lot more interesting if we read a new chapter at home ourselves from a prescribed source and look forward

to an interactive discussion and a q/a session about the same in the classroom –more exciting for the teacher & definitely more exciting for the students. Now lectures can be watched or read about at home – created by your own lecturer herself or any other expert or even written and then discussed in the class. The idea is not 100% new of course – top schools and institutions have been

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Flipped VS Traditional





practicing it partially for a while A teacher herself expressed her excitement towards the proposition because she no longer has to give the same lecture again and again (gives it once and puts it online) - instead every class is a new experience and interaction. Its more exciting for students too - the classroom is more interactive and

interesting, and they do questions and practice there instead of at home or in tuition. The demand for tuitions itself shows the need for such a system —bydoing the homework first on a topic - practice and clarification time will be created in the classroom —and hence will eliminate the very need for tutions. If the worry is that students won't adhere well to a flipped classroom....lam happy to share that the concept has been tried and tested and has shown some amazing results!

The MOOCs

The most exciting advancement in the last few years for educators and innovators around the world you are given exercises and homework to deter-

has the creation and rise of MOOCs. What are they – MOOC stands for Massive Open Online Course - it refers to a new way of teaching, and a new way of learning for students after school. It refers to **full courses** – complete with lectures, discussions with teachers and other students, interactive exercises and full testing – available freely or affordably online. Their objective is to enable students in far reaching areas of the world to access study materials from top Universities like Harvard

,Yale,MIT & John Hopkins. Some even give you Certificates & a Degree, after completion of a

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course. The potential is more than that – in poor, developing nations – the limited and often substandard college teaching is bypassed for free, world class coaching, and all you need is a computer and an internet connection.

So how did this start –the MOOC revolution really began in 2011 - when Stanford launched its own

free online courses, followed by similar actions by many top colleges. The successes have been in no small measure either - profitable venture Coursera boasting 4.7mn students, and not-for-profit initiative edX (started by Harvard and MIT) boasting 1.2mn students not just that - Scientific American shows how a much higher than ex-

pected percentage of students have taken a MOOC. Unbelievable success.

How it works – the model of a MOOC, in general terms, is to offer courses -not random lectures and videos – full courses from top institutions into which you enroll, and are then guided through a specific sequence of videos and lectures. In between,



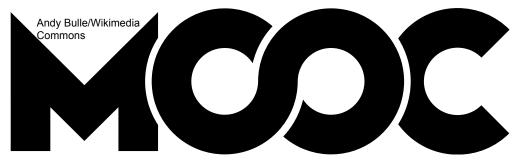
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mine how you are faring. Use of adaptive learning software allows the course to determine where vou are weak and give you the corresponding lecture or exercise. There are also online discussions, debates and inter-

actions between these sessions; and maybe assignments and exams at semester ends (depends

> on course – some are free-flowing, some are more structured). You have hands on help from professors – of the best colleges in the world - if you have any difficulty. You are given a certification on the completion of a course (after you pass a final test, of course) the acceptance of these certifications in today's world is still marginal, but is bound to grow as these courses become more popular. It may be true that these courses cannot replace real college experiences and none offer a real degree, but they have still revolutionalised higher education. Students unsatisfied with their college, have a good alternative – learning does not require college attendance, and is a lot more personal. In

places where conventional higher education cannot solve the problems like Africa and parts of India – MOOCs are an unbelievably good solution. In Rwanda, the Kepler project was a huge success – transforming lives of so many Rwandans through a blended course that used real professors on the ground in Rwanda along with Ivy



League college instruction online to give Rwandan students a chance at proper college learning. This is the true potential – stand alone or blended – MOOCs can either supplement college learning. or in places that don't have the latter,...provide

Say Hello to Salman Khan

Although MOOCs may have captured imaginations in the last couple of years – the "real" revolution in education is being driven by the Khan Academy; and the efforts of one man – Salman Khan. As most will know, I am not talking about the Bollywood actor, but instead of the "superstar" teacher – who has, through simple 10 minute lectures, changed the lives of more than 10 million children around the world.

But first – Khan Academy – what does the biggest school in the world really do? It was conceptualized when Mr. Khan wanted to help his niece living faaaaar away with passing her maths exam - he made a video explaining the concepts and sent it to her. One video to help his niece grew into a number of such 10-minute videos, on request, on Youtube, all the way back in the year 2006. However, videos came few and far between until 2009 when Khan guit his regular job to give the initiative more time. It was still a struggling one man YouTube success until venture capitalist John Doerr's wife Anna Doerr suddenly poured \$100,000 into the project followed by million dollar donations from Google and the Gates Foundation in 2010. He was able to improve his software and equipment and hire a few people – improving the quality of the videos - and turn a regular YouTube success into a true global sensation in the next couple of years.



Currently working with a modest staff of 37, 'Sal' (as his fans call him) is now running the world's largest school – 10 million students, and 3,400 videos that have been watched over 200 million times. They also offer problems to solve (test you) for every topic – once you solve ten in a row – you



are certified by Khan Academy to have "mastered" the topic. 2 million such problems are solved every-day by students.

Khan Academy's entire usp revolves around clearing/mastering concepts, and "first principles", as my dad would say. His videos (he has made 3000 out of the total of 3400, outsourcing to experts from time to time) teach you this concept – in a simple, easy to understand way – and the site offers questions to make sure you have understood. For millions of struggling high-schoolers – he offers a free alternative to tution and inadequate teaching/inattentive learning.

Finally, he is a "superstar" teacher now – world famous – more than any other teacher since Aristotle – more used than any teacher ever – a celebrity in the teaching profession.

It's a completely new phenomenon – every profession has its celebrities and maestros – famous actors, famous directors, famous CEOs, famous sportspersons, famous doctors, famous singers – but never really in teaching. Even science has Stephen Hawking, news media has Rupert Murdoch, medicine has its celebrities – but teaching never really had an ICON –But now they do. Sal is a phenomenon and an idol for millions around the world – that will change the profession.

As Bill Gates famously said, "It was a good day [for the world, when] his wife let him quit his job."

SNAPSHOTS

RBI's Rockstar - Raghuram Rajan



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On Sept 4th, 2013 Raghuram Rajan was **appointed the new governor of the Reserve Bank of India**. Being one of the youngest RBI governors at just 50 years of age, with impressive qualifications and credentials that include IIT (Delhi), IIM (Ahmedabad) & MIT –he has not only India but the world watching him. He immediately brought into effect some policy changes that stopped the speedy downslide of the rupee and increased the exchange rate from Rs 68 to Rs 65. The stock market also went up by a 1000 points. While it is early stages yet and it is a long road to recovery still but Mr Rajan's appointment has already **given a much needed boost to the India economic sentiment** - improving public confidence in the RBI and making some promising reforms. He will be covered in detail next week.

Nasa's LADEE

LADEE (Lunar atmosphere dust environment explorer) as explained by NASA is a unmanned robotic mission on its way to the moon -that will orbit the moon and gather information about the lunar atmosphere and environmental influences on lunar dust –this will help understand other planetary bodies. LADEE is going to take 30 days to reach the moon and enter it's orbit. What's unique about the LADEE is that is has been made using a "Common Spacecraft Bus" design –meaning instead of a customized, designed for a specific mission type of spacecraft –this common modular design has the ability to perform various kinds of missions – with just the addition or subtraction of some components but the basic common body remaining the same . This will hugely bring down the cost of space craft development



The Nirbhaya Verdict

The fast tract court after a nine month trial has given the death penalty to four of the criminals convicted in the Nirbhaya case .It is the first fast track verdict of its kind and while nothing seems a deserving enough punishment for those involved in the heinous crime including the juvenile convict serving just a 3 year term —we do take some solace in the fact that for the first time the "combined outrage and outcry of a nation was heard"



Leander Paes Shines at the US Open

The US Open 2013 ended on the 9th of September. The favourites came through to win in the Men's and Women's Single. Rafael Nadal and Serena Williams. Nadal beat Novak Djokovic, in 4 sets, who was probably tired after his long 5 set game against Stanislas Wawrinka. In the Men's Doubles, Leander Paes and Radek Stepanek won. They made swift work of Alexander Peya and Bruno Soares. This was Paes' 3rd US Open title and his14th Grand Slam title. This also made him the oldest man to win a Grand Slam at the age of 40.

Tokyo 2020



Japan won the bid to hold the 2020 Olympics in its capital Tokyo-The Japanese are jubilant about hosting the Olympics after almost 2 decades –they believe it will infuse hope ,energy into the Japanese. Tokyo won the bid over Madrid (Spain) and Istanbul (Turkey) People who have been through a tough economic phase the past few decades with a depressed economy, its territorial tension with China and its share of terrible natural disasters –there is a reason to be overjoyed and celebrate for the Japanese

Leader to Know Beroz Vacha



You've probably never heard of her — if you have, give your self a huge pat on the back— because she is one of the most amazing and inspiring person I've ever learnt about. Beroz N Vacha is 88, and yet she has lost none of the passion, drive or youthful enthusiasm that led her to start working towards such an impossible cause back in 1977. And what a wonderful cause it is — the empowerment of India's deafblind children. In 1977, Beroz left her job as a teacher for the deaf in an institute because they would not accept deafblind children. She realised that her calling was to help those who would not be accepted by anyone else — those specially abled children who

are refused education in most parts of India. So, with Rs 150 in her pocket, she founded the **Hellen Keller Institute for the Deaf and Deafblind** in Mumbai, and became the first teacher of deafblind chil-

dren in India. From 2 teachers and 3 students in a "modest living room", it has grown to a full institute with 2 centers and nearly a hundred students. Still sounds small - but the institute has helped, founded and supported innumerable other institutes and causes all over Southeast Asia, and trains teachers for the deafblind in a variety of nations. But the cause is so much more. Beroz wants the deafblind to be accepted into society, and giving a fair opportunity to develop in life and work related skills. It may sound idealistic, but she has 3 basic beliefs, inspired Helen Keller herself – all a child needs is an education and unconditional love and every child can be educated. With these three simple beliefs, she has created an institution to give India's deaf, blind and deafblind an education, to train them in daily life skills to operate computers and to even teach them to swim as they do in the residential school of the Helen Keller in navi Mumbai .Above everything else her aim is to have them accepted and included in society. As Pooja Kapur who is very close to Beroz, says, "There can be no greater teacher than one who can teach a person who cannot see, hear or say anything since birth how to live, learn and earn." Watch this video - I promise you that whatever you were planning to do with those 20 minutes is worth missing for this -

www.youtube.com/watch?v=OXj91vAFmGw

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