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# FUTURE NEWS

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## THE EDUCATION REVOLUTION WILL NOT BE TELEVISED

by J.P. O'Malley



Whenever the words Artificial Intelligence crop up in conversation, there is a tendency to start describing a future in conjunction with two words: anxiety and fear. Typically, the subject is portrayed in dystopian terms alongside concepts such as transhumanism, where man and machine merge into a single being. Or a time scale is discussed where the end of employment is rapidly approaching. In such a scenario, machines master almost every job, from doctor to journalist, taxi driver to gardener consequently destroying the global economy, as we presently understand it at least.

At its most apocalyptic, this dystopian narrative predicts that

machines will become conscious agents, outsmart humans, and a war of civilisation will begin. It's a future where humans end up as slaves to their machine masters. However, such an outcome is usually not the result of any deep-seated analysis of AI, but rather a far-fetched roadmap of sorts, which predicts the future using dystopian Hollywood movies as a guide. Or worse still, taking the religious-like rhetoric of Silicon Valley futurists as gospel.

Indeed, any discourse either in the tech world, or in mainstream society — relating to AI almost always lacks nuance and context. Particularly, say, how AI could help and support humans, rather than enslave us. British author, political biographer and academic, Sir Anthony Seldon, was so frustrated at this histrionic portrait of AI in public discourse that he decided to write a book about it.



Sir Antony Sheldon

"Al is coming, and most people don't understand the full power of it," the 64-year-old author explains, from his office at the University of Buckingham in the UK, where he currently holds the position as Vice-Chancellor. Seldon then draws an analogy between 2018 and the year 1886, when Karl Benz discovered the combustion engine and invented the motor car: a move that would rapidly change the globe for the next century.

"This is the moment we are currently at," Seldon explains. "Al is going to have more impact than the car had. So, it's better to be optimistic about it than to be ignorant and pessimistic."

"And by being optimistic, we will shape AI, not just for a narrow sphere of rich giant tech companies, but use it for the interests of all," Seldon adds.

Given the constant confusion and misapprehension that exists around the term itself, I ask Seldon to succinctly define AI before we take the conversation any further.

"Al is the ability of machines to effectively think for human beings," Seldon explains. "To understand us individually, and to adapt the flow of information, in reaction to the ever-changing stimuli and signals that we are giving off to those machines."

"Taking either a two-dimensional hologram or robotic form, AI is a revolutionary concept that will — for the first time in human history — allow us to build machines who can comprehend us individually, and collectively, at a very high level," Seldon adds.

Or, put in more technical terms, Al is a digitally controlled process by a human-created machine, which perceives its environment and adapts to it, in order to achieve its objectives. Moreover, Al technologies aim to reproduce, or surpass, abilities in computational systems that would require "intelligence" if humans were to perform them.

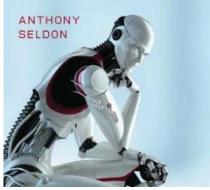
These machines will make our lives enormously easier, Seldon believes – as they take care of mechanical tasks, such as driving our cars or negotiating our calendars. But they will then begin to take care of more emotional tasks too, such as bringing up our children, and caring for our elderly.

However, it's in the realm of learning, and more specifically in the classroom, that the revolution of Al will really come into its own, Seldon believes.

"There is no more important issue facing education, or humanity at large, than the fastapproaching revolution of AI," Seldon writes in the opening chapter of his latest book, The Fourth Education Revolution: Will Artificial Intelligence Liberate or Infantilise Humanity.

#### THE FOURTH EDUCATION REVOLUTION

HOW ARTIFICIAL INTELLIGENCE IS CHANGING THE FACE OF EDUCATION



We tend to hear a great deal about AI in its application to things like transport, medicine, the factory production line, and even welfare. Education,

however, Seldon posits, has been comparatively overlooked. His new book aims to fill that void.

"At the moment we have an education system that teaches human beings to be like robots," Seldon explains. "We need to have an education system that encourages human beings to become full human beings."

Indeed, it's an enormous paradox, one could argue, that machines will play such a vital role in making us become more consciously aware of our humanity, driving us to think more critically and express ourselves with far more clarity and sophistication.

"With AI in education we are going to have a broader notion of intelligence and a flowering of everything it means to be a human being," Seldon adds.

Seldon points out that not only is Al transforming how humans think and interact, it's changing the very definition of intelligence itself. Intelligence Quotient (IQ) may once have been the most effective way of measuring people's ability to think effectively and retain information. But that is rapidly changing. Now that it's accepted that we can bestow intelligence to machines, other forms of human intelligence, which previously were deemed unimportant, are being explained with far more depth and analysis.

"IQ defined intelligence in its own way, for its own ends," Seldon points out. "It was essentially male, white, middle class, and highly cognitive."

"I think the measurement of IQ diminished hundreds of millions of human beings whose particular gifts or unique signatures were not in those directions," Seldon explains:" It basically privileged those who were like the designers of IQ measurements themselves. And it ignored a far broader range of intelligences.

These include, as Seldon points out, curiosity intelligence, emotional intelligence, artistic intelligence, personal intelligence, moral intelligence, spiritual intelligence, collective intelligence, and many other forms of intelligence.

As the title of his book would suggest, Seldon describes this fusing of education and AI as the Fourth Education Revolution: a concept that is closely connected to the Fourth Industrial Revolution, which describes the current fusing of technologies and blurring of the lines between the physical, digital, and biological spheres. To understand how education is rapidly changing with the advent of technology, Seldon then briefly turns to the past and the evolution of mass learning.

Seldon draws attention to the fact that the first educational revolution began when Homo sapiens emerged around 200,000 years ago. This was the beginnings of learning, when our humanoid forebears gathered around fires and learned how to make clothes and tools, handing this knowledge down to their offspring. The second education revolution began with the rise of institutionalised learning in schools and writing in Ancient Egypt and Mesopotamia around 2000 BC. The third revolution began with mass education, helped by the printing press during medieval Europe, and the fourth revolution is the coming of AI, robotics in our present age.

Seldon believes this coming revolution is extremely radical for a number of reasons. Primarily because it will destroy the class barriers that have hitherto existed in education for hundreds of years in the "factory school model" – a term Seldon gives to the third education revolution.

When AI enters the equation, Seldon believes this will change education across the globe in a dramatic fashion: most notably in the developing world. Seldon points out that in the present education system, the best teachers are concentrated in the wealthiest countries and the wealthiest areas within those countries.

"There will soon be an AI specific for each student to tutor them in front of their screen in every subject," Seldon explains. "So, each student will have a personalised teacher, rather than being taught in a class of 50 or 70 students, or by no teacher at all. And that teacher [in the developing world] will be of the same quality as the most advantaged child living in New York, London, or Milan."

What kind of implications will that then have for the economic and social divisions which presently exist between the first and third world?

"I think it will have enormous implications," Seldon responds. "And the implications are ones we must think through very carefully, because the young in the developing world will be far better educated than they presently are. And if there aren't challenging and interesting jobs to do, there will be great discontent."

"So, we need to ensure that the rest of society develops in these countries, so that they can keep pace with the educational and cultural aspirations of the newly educated," Seldon adds.

But inequality isn't the only area where AI can offer radical solutions to greatly improve education across the globe. AI can also help humans to think more perceptively and with far more clarity.

"The hope with the Fourth Education Revolution is that it helps us think for ourselves," Seldon says, "as opposed to just thinking along tram lines, which is what the factory school model was based on — always obsessed with finding the right answer in the right way."

Seldon then turns his attention to the more technical aspects of how these new AI teaching methods will operate. Voice and face recognition will play a crucial role here, he believes. Might there be a danger that machines teaching children will fail to pick up on social cues, for example?

Absolutely not, Seldon insists.

"The eye of the machine, its camera, will be looking at the student, and its microphone will be listening to the student's voice," says Seldon. "It will be comprehending the difficulty the student will have, and it will be able to adapt the material, just as teachers do now."

One of the most common misconceptions about AI is that it necessarily has to involve robots. Robotics and AI are certainly distinct and related disciplines, Seldon posits: "But while robotics is concerned with physical movement and human interaction, AI is about thought and human impact," Seldon explains.

Robots are obviously important when you are dealing with materials, or a factory production line. But when the technology transfer is from AI to human, you don't need to have a threedimensional moving box that can teach the student, Seldon insists: "It can just be on a screen, a headset, or through a hologram. You don't need to have robots in the classroom or at university."

While robots will not be parading down the corridors of schools and universities, whipping students into line anytime soon, the look and feel of educational institutions will almost be entirely transformed from their current form, Seldon believes.

"Schools and universities of the future will be more like open plan offices," Seldon explains. "And overall, it will be a far more pleasant experience for many people, because it will be personalised," he adds. "It will be about stimulating lifelong knowledge development and capabilities, and not trying to finish everyone off into a finalised product when they are 18-yearsof-age. Students will also learn a much broader range of subjects, and there will be far more time in the day for enrichment, group work, problem solving, and collaborative activities too," Seldon says.



www.ypulse.com/what-will-the-school-of-the-future-look-like

He then cites some examples of educational institutions who are at the forefront of combining digital technology with education.

"Arizona State University has been very successful in adapting technology to a very broad range of needs for students and making a far more successful experience for students," Seldon explains. "This has been led by an education visionary, Michael Crow, who understands the transformative power of digitalisation and AI."

There are many universities and schools worldwide that are adapting to technology too. Notably in the UK, Seldon says.

"There are some very imaginative projects looking at the adaptation of the university experience, with a much more personalised, pick-andmix style of university provision," says Seldon. "This would be where students no longer have to go to one specific university, but can study one course in, say, Stockholm, and another in Oslo, one in Moscow, and another in Shanghai."

"Putting together a degree in a much more unique way," Seldon adds, "with distance learning and a range of other forces, which helps them benefit from Al technology to improve the effectiveness of communication." Seldon concludes his book with an argument about how Al will play a huge role in spreading democracy around the globe, particularly to authoritarian countries.

"After ancient Athens, it hasn't been possible [in the democratic process more generally] to gather everyone together in one meeting hall to vote," says Seldon. "But AI — and more broadly digital technology — can have prospects of everyone having direct say on a whole wide range of issues. And with AI challenging the development of young minds it can help them to think in individual ways, rather than groupthink ways."

Seldon believes that the United Nations (UN) needs to be at the forefront of this new democratic revolution. "The UN is going to become extraordinarily important for AI," Seldon insists. Why so?

"Well, who can we trust to oversee AI on a global scale?" Seldon responds rhetorically that: "national governments have their own agendas, as do tech companies."

"So, I think the UN will come into its own over AI. Because the UN represents the views of all peoples, all nationalities, all faiths and none," says Seldon. "And it can set the frameworks for AI for the benefit of all of humanity, and not just a section of it."

Given that almost all the conversation today has been in glowing and positive terms about AI, I conclude by asking Seldon about possible downsides of the technology. Are there any?

"Al has the ability to infantilise us", Seldon warns. "If machines, for the commercial advantage of the few, are going to make our lives easier and easier, then what makes humanity worthwhile will be taken away from us," Seldon adds. "So, the risk with Al is less that the machines are going to take over from us, but more that they are going to make us become like couch potatoes without the sharp intellectual challenges and applications that reward us."

Still, the British author says he'd like to finish our chat on a positive note: "So rather than humans helping humans to become more like machines, the irony is that with AI, you will have machines helping humans to become more fully human," Seldon concludes.

The original article appeared in Scenarios, the official magazine of the Copenhagen Institute for Futures Studies, and is reproduced with permission. **New Power** by Jeremy Heimans and Henry Timms

## Book Review by Charles Brass – Chair, futures foundation

Our Hyperconnected World – and How to Make it Work for You

How Power Works in

JEREMY HEIMANS & HENRY TIMMS 'If you want to understand how the world is changing,

'If you want to understand how the world is changing, what's really happening, and how we can all find our way, this book could not be coming at a better time.' SIR RICHARD BRANSON

The future will be won by those who can spread their ideas better, faster, and more durably Whenever a new book claiming to offer insights into some important issue facing the modern world arrives, one of the founders of the futures foundation inevitably scours its index for references to power. If he doesn't find any (which is disturbingly often the case) he immediately discards the book as ignoring possibly the most important challenge facing modern human society – through whom and in what manner is power expressed.

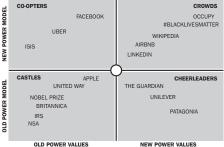
I suspect Torrey would be encouraged to read this book. Not only does it acknowledge the primacy of power dynamics in understanding how the modern world works, but it develops a powerful framework through which contemporary power dynamics have evolved and can be understood.

The book is written by two activist leaders (one Australian and one American) who have put their understanding of power to the test by successfully creating organizations focused on creating change in the world.

The book begins by quoting Bertrand Russell who defined power as the: "ability to produce intended effects" and then goes on to define two types of power – old power which is like a currency held in the hands of a few and new power which is like a current that is open, made by many and is participatory. Old power is leader–driven, it downloads and it captures. New power is at its most powerful when it surges. The first thirty or so pages offer various case studies of the shift from old power to new power, which the authors use to create a matrix demonstrating the four types of power structures in the modern world.

In the top left quadrant are those who utilize the new models of power but retain old power values (these are called co-opters and include powerful corporations such as Facebook and Uber). Below them are those who retain old power values within old power structures (called Castles – and represented by the Nobel Prize committee and Apple). In the top right corner are the organizations that represent new power models that are built on new power values (Wikipedia, #blacklivesmatter and the occupy movement are examples), and finally in the bottom right are the Cheerleaders who are using old power structures while trying to operate through new power values (companies like Patagonia and media organizations like the Guardian are examplars. Graphically this looks like:

The New Power Compass



<sup>(</sup>from page 28)

Having established this framework, the rest of the book

is an attempt to explain how these new models work in practice, and how to convert old structures into structures through which this new power current can flow easily. Here the authors have considerable personal experience, although they do not emphasize examples with which they have been involved, probably because there are many other relatively well known examples which they recount. They synthesize the successful transformations as all being Actionable, Connected and Extensible (they like the acronym ACE).

The authors do not avoid noticing that new power structures and values can be used for good as well as evil, and devote some pages to describing how modern terrorist groups probably demonstrate a better understanding of new power than many modern political leaders. As they say: "The future will be won by those who can spread their ideas better, faster, and more durably" (p53) and that includes the purveyors of fake news and climate denial. One positive example with which author Heimans was intimately involved that is explored in some detail is the emergence in Australia of GetUp. This example is the centerpiece of the chapter called "How to build a crowd", which also provides the other author (Timms) to describe his involvement in the evolution of a philanthropic initiative called #GivingTuesday.

One of the attractions of this book is that the authors are fully prepared not only to help their readers understand how these new power structures work, but why they sometimes don't. This is something that is the focus of Chapters 5 and 6, in which the news aggregation and discussion site Reddit features as the major case study. Having grown large and powerful, the authors describe how a series of large and small decisions contributed to the site grinding to a halt in 2015 because of an internal revolt started by its most prolific users and supporters. The same chapter describes the differences in how two prominent ride share companies Lyft and Uber create their crowds, and suggests which might emerge the stronger over time.

Money is a key power dimension, and Chapter 7 (interestingly called "The Participation Premium") focuses on how money is raised and distributed in the new power world. Crowdfunding is an important part of this story, but the chapter begins by talking about how the developer of an immensely popular video game raised hundreds of millions of dollars promising the next iteration of the game, and continues by focusing on a revolutionary microbrewery success story.

Chapter 8 looks at the transition from old power to new power, using case studies to demonstrate that simply replicating old power structures on new media can have outcomes that would have been hilarious if they weren't so serious (the 'Boaty Mc Boatface' story is a classic). It also explores how old power companies such as Lego have successfully reinvented themselves using new power structures.

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When it comes to looking at leadership in the new power economy (Chapter 9), Donald Trump makes an unsurprising appearance, as do Pope Francis, and Lady Gaga.

Chapter 10 looks at how organizations are blending old and new power systems, with the National Rifle Association (NRA) providing a (quite surprising) case study, as does the TED empire. The authors also provide a detailed insight into the Podemas political party that has had so much impact recently in the separatist movement in Spain.

The final two chapters look at how new power is at work in areas such as the future of work (including a fascinating Dutch case study on how aged care nurses have banded together to create a new model of health care), and society (here they explain their concept of a 'full-stack' society, which is one in which all the elements of new power are embedded at all levels). They conclude by saying: "Building this kind of world will be messy - and it certainly won't be without pockets of hate, co-optation, and a whole lot of distraction. But it is a world all of us can create together, and it is the one most worth fighting for".

The authors intend their book to be the foundation for a movement, and to that end have created a website where readers can collaborate to talk about their experiences combine their actions - www. thisisnewpower.com.

# **FUTURISTS IN ACTION**

## WHAT IS A FUTURIST? 11 THINGS TO KNOW ABOUT THE COOLEST JOB YOU NEVER KNEW YOU COULD HAVE

by Iman Hariri-Kia



Sheryl Connelly

When you hear the word futurist, what comes to mind? You might think about those fortune teller stands at the fair — for \$50, you can learn at what age you'll die, if you will ever find true love, and address any other deep-seated insecurities. But where fortune tellers will root their predictions in divine forces and mystical unexplained powers, futurists make their predictions based on stone cold facts. A futurist is a kind of consultant who makes predictions based on future trends they identify. Their point of view can even impact how companies design products or how communities run their outreach, which makes being a futurist officially one of the coolest jobs of all time.

"When I was younger I didn't know this job existed, so I often ask myself how I ended up with it," Ford's in-house futurist, Sheryl Connelly, tells Bustle. "What I really wanted to do was be an artist. But when I look back I feel like it was divine intervention or that it was my destiny."

Futurists like Connelly spend their days recognizing trends, explaining why they're recognizing it, and suggests how the trend might make an impact on a global scale — so that brands can take advantage of that forward-thinking insight for their future products. Sound complex? I agree, which is why I was surprised to learn that it's a field that anyone can fall into — among other mind-blowing facts about this job. Here are 11 things all future futurists should know about this unconventional career path.

#### 1. IT DOESN'T REQUIRE A PARTICULAR DEGREE

You don't need to study futurism in order to be a futurist. In fact, many students may not even realize that this job exists. Connelly made her way into futurism by accident— she began working at Ford's call center, answering the 1-800 line. "I studied finance in undergrad, I went to law school, I had an MBA," Connelly says. "I never thought I was preparing for a role of a futurist, and don't think that's the secret recipe so to speak, but for me — finance taught me the fundamentals, the MBA taught me how to apply strategy to the real world, and the law degree has been very helpful in terms of research."

But! If you **do** want to study it, there's now a program for that. "You can get a degree in futuring now — in Texas or Hawaii," Connelly says. "Anyone can do it: if you have discipline, and constantly ask how and why and where, and back it up with very well articulated point of view, then you'll convince others."

#### 2. THERE'S NO FORTUNE TELLING INVOLVED

A common misconception is that futurism is all palm reading, tea leaf-ing, and tarot card interpreting — but this couldn't be further from the case. "To have the title of futurist is daunting, because people scoff and giggle," Connelly says. "They want to know where your crystal ball is, or what the winning lottery number will be. These are real frequent questions I receive!" In reality, futurism is about being able to back up your point with a very rational, well researched, persuasive argument.

#### 3. YOU MUST PAY CLOSE ATTENTION TO TRENDS



The key to being a futurist is identifying trends, being able to explain why they're important, as well as what the underlying drivers are and what the implications will be to the world at large. "Trends start to become a common vernacular in big businesses," Connelly says. "It helps us communicate more efficiently, because people from all different departments can refer to them."

#### 4. IT INVOLVES A LOT OF READING

A futurist will spend the majority of their time collecting and analyzing information, in order to develop their unique vantage point. "I spend a lot of time reading," Connelly says. "You have to do the research to come up with your point of view, and then once you have that, the rest of your time is spent cascading and communicating it throughout the organization."

#### 5. YOUR WORK WILL HAVE GLOBAL IMPLICATIONS

When you start thinking like a futurist, you can't help but apply your ideology to every train of thought that enters your mind. "As a futurist, I'm always asking people to step back and take another look," Connelly says. "It creates a much broader viewpoint: you no longer focus on just local effects, but you try to see the big picture. It's all connected."

#### 6. YOU WILL COLLABORATE WITH A LOT OF PEOPLE



Since trend reporting and referrals have become a shared commonality amongst different industries and professions, futurists will often work with many different people: from engineers and designers, to PR departments or CEOs. "An important step is collaborating and working individually with several teams," Connelly says. "Together, you'll look for ways to integrate your insights. What's really critical is that you're constantly finding ways to bring people on board."

#### 7. PATIENCE IS A VIRTUE

When you're predicting future trends and phenomenons, the truth is, you won't be able to see the immediate impact of your work — at least for some time. That's where patience comes in. "I always focus on some form of manifestation so that the work can make a difference," Connelly says. "But you won't always know the ripple effect that you'll have, so you'll have to be patient."

#### 8. YOU CAN'T ACTUALLY PREDICT THE FUTURE

Of course, futurists don't *actually* predict the future for a living. "As a futurist, my job is to remind people that no one can predict the future," Connelly says. "What I do is push back on the status quo and expect the unexpected. I consider the physical realities, the economic affect, etc." Instead, they take into account all possibilities and extremes, and try to prepare for a range of different outcomes.

#### 9. YOUR WORK CAN IMPACT THE WAY PRODUCTS ARE DESIGNED

As Ford's in-house futurist, Connelly's work has impacted the company's product design by reminding them that a large portion of the population is aging. "There's a big segment of the country that will soon be over the age of 60, and we need to start thinking about how we can service their needs," Connelly says. "When someone gets older they have delayed response time, impaired vision, and limited range of motion. My job is input this to designers and engineers, encouraging them to address the needs of an aging population before the fact, but to do it in a way that appeals to consumers that are both 16 or 61."

#### **10. YOU'LL LEARN TO THINK DIFFERENTLY**

Once you're a futurist, you'll begin questioning everything you do and it's impact on society — it's an unavoidable side effect of the job. "As you start to think this way, you apply it to every train of thought," Connelly says. "This is what a company would do, but how can I apply this to my family? Or to my community? Or even my kids? It's about sparking new ideas by constantly asking yourself 'If this, then what?'"



#### **11. MOST PEOPLE PRACTICE IT & DON'T EVEN REALIZE IT**

We are all futurists at heart and probably don't even know it! The reality is, most of us know that we can't actually predict the future, but we still subconsciously try to do so everyday. "When you get married, you assume it'll last a lifetime, and when you make an investment you assume it will pay off in the long run," Connelly says. "But what happens if those things don't play out? That's where futurism kicks in."

Despite her thrilling, constantly-evolving career path, Connelly hopes to encourage anyone who might feel frustrated or lost in their current professional fields. "I do the orientation for new hires, and I know that there's someone in the audience that feels the same way I did," Connelly says. "Thinking, 'I'm not sure I'm on the right path, how did I get here, where am I going?' I really believe things work out how they're supposed to," And hey, if a futurist predicts that good things lie ahead — their vision is bound to become true.

The original article appeared at Bustle.com, and is reproduced with permission.

### **Signals in the Noise** 9 THINGS THAT WILL SHAPE THE FUTURE OF EDUCATION: WHAT LEARNING WILL LOOK LIKE IN 20 YEARS

by Christiaan Henny



Students will be learning outside, armed with different devices, listening to a teacher of choice. Skills will not be assessed on paper but based on their performance in the field. What on earth are we talking about? Welcome to the future of education.

As technology is rapidly changing the world around us, many people worry that technology will replace human intelligence. Some educators worry that there will be no students to teach anymore in the near future as technology might take over a lot of tasks and abilities that we have been teaching our students for decades. The thing is: Education will never disappear. It will just take up different forms. Here we list 9 things that will shape the future of education during the next 20 years.

#### 1. DIVERSE TIME AND PLACE.

Students will have more opportunities to learn at different times in different places. eLearning tools facilitate opportunities for remote, self-paced learning. Classrooms will be flipped, which means the theoretical part is learned outside the classroom, whereas the practical part shall be taught face to face, interactively.

#### 2. PERSONALIZED LEARNING.

Students will learn with study tools that adapt to the capabilities of a student. This means above average students shall be challenged with harder tasks and questions when a certain level is achieved. Students who experience difficulties with a subject will get the opportunity to practice more until they reach the required level. Students will be positively reinforced during their individual learning processes. This can result in to positive learning experiences and will diminish the amount of students losing confidence about their academic abilities. Furthermore, teachers will be able to see clearly which students need help in which areas.

#### **Signals in the Noise** 9 THINGS THAT WILL SHAPE THE FUTURE OF EDUCATION: WHAT LEARNING WILL LOOK LIKE IN 20 YEARS

#### 3. FREE CHOICE.



Though every subject that is taught aims for the same destination, the road leading towards that destination can vary per student. Similarly to the personalized learning experience, students will be able to modify their learning process with tools they feel are necessary for them. Students will learn with different devices, different programs and techniques based on their own preference. Blended learning, flipped classrooms and BYOD (Bring Your Own Device) form important terminology within this change.

#### 4. **PROJECT BASED.**

As careers are adapting to the future freelance economy, students of today will adapt to project based learning and working. This means they have to learn how to apply their skills in shorter terms to a variety of situations. Students should already get acquainted with project based learning in high school. This is when organizational, collaborative, and time management skills can be taught as basics that every student can use in their further academic careers.

#### 5. FIELD EXPERIENCE.

Because technology can facilitate more efficiency in certain domains, curricula will make room for skills that solely require human knowledge and face-to-face interaction. Thus, experience in 'the field' will be emphasized within courses. Schools will provide more opportunities for students to obtain real-world skills that are representative to their jobs. This means curricula will create more room for students to fulfill internships, mentoring projects and collaboration projects.

#### 6. DATA INTERPRETATION.

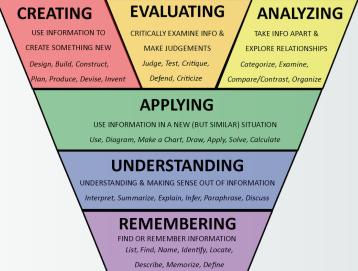
Though mathematics is considered one of three literacies, it is without a doubt that the manual part of this literacy will become irrelevant in the near future. Computers will soon take care of every statistical analysis, and describe and analyse data and predict future trends. Therefore, the human interpretation of these data will become a much more important part of the future curricula. Applying the theoretical knowledge to numbers, and using human reasoning to infer logic and trends from these data will become a fundamental new aspect of this literacy.

#### 7. EXAMS WILL CHANGE COMPLETELY.

As courseware platforms will assess students capabilities at each step, measuring their competencies through Q&A might become irrelevant, or might not suffice. Many argue that exams are now designed in such a way, that students cram their materials, and forget the next day. Educators worry that exams might not validly measure what students should be capable of when they enter their first job. As the factual knowledge of a student can be measured during their learning process, the application of their knowledge is best tested when they work on projects in the field.

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Signals in the Noise 9 THINGS THAT WILL SHAPE THE FUTURE OF EDUCATION: WHAT LEARNING WILL LOOK LIKE IN 20 YEARS



#### 8. STUDENT OWNERSHIP.

Students will become more and more involved in forming their curricula. Maintaining a curriculum that is contemporary, up-to-date and useful is only realistic when professionals as well as 'youngsters' are involved. Critical input from students on the content and durability of their courses is a must for an allembracing study program.

#### 9. MENTORING WILL BECOME MORE IMPORTANT.

In 20 years, students will incorporate so much independence in to their learning process, that mentoring will become fundamental to student success. Teachers will form a central point in the jungle of information that our students will be paving their way through. Though the future of education seems remote, the teacher and educational institution are vital to academic performance.



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