TRM

rethinking education

Author: Tio
Review: Ray
Proofread: Ray
Design: Tio
Year: 2013

Summary:

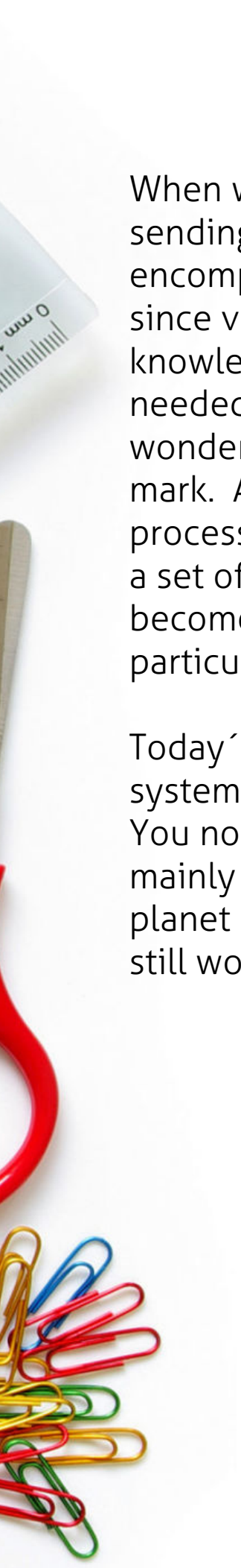
Today´s education is so embedded into the monetary system that it's almost impossible to separate the two. You now spend 12 to even 20 years or more studying to mainly become a worker to pay your way through life on planet Earth. In this article we will showcase how the future of education could look like,.

CONTENT:

- *THE PRESENT UNEDUCATED EDUCATION*
- *DISCIPLINE MAY RUIN THE EXPERIENCE*
- *ORGANIZED CHAOS*
- *A CONSTANT PLAY*

When we think about education, we often think of sending our kids off to school or college, but education encompasses a much wider concept that has existed since very early humans, perhaps even longer. Sharing knowledge and skills with children, either because they needed a skill to create tools or to help encourage wonder about the world, has always been a strong human mark. At times, people have tried to mechanize the entire process for efficiency (teaching a language that required a set of rules) or personal gain (teaching children how to become workers to be a more integral contributor to a particular culture).

Today´s education is so embedded into the monetary system that it's almost impossible to separate the two. You now spend 12 to even 20 years or more studying to mainly become a worker to pay your way through life on planet Earth. I spent 13 years in school and college and I still wonder why....



The Present Uneducated Education

I personally hated school and feel it did not educate me at all, but this is not a war that I am taking alone. In addition to almost all the people I know who share the same feeling, many scientists, teachers and experiments have reached the same conclusion: school, in its current form, is obsolete.

This clip from *TROM Documentary*, a documentary that I made, presents my personal school experience and some experiments proving how children can learn better by themselves, contrary to what school promotes. It also provides some insights into how the entire notion of education may be rethought, although the article that follows will investigate this entire subject much deeper and offer new and more powerful examples :

I also highly recommend that you take your time and watch these three documentaries that analyze our modern culture's school systems in depth: The Forbidden Education , The War on Kids and College Conspiracy.

SO WHY DO WE NEED TEACHERS AND DISCIPLINES ANYMORE ?

I learned to drive a car by practicing with my father; I learned English from movies, from chatting with other English speaking people and from what I read; I learned through trial and error how to build good websites on my own; I even learned to swim on my own. Riding a bicycle, using a computer or other electronics, making jokes, understanding how people behave, what is a planet or a galaxy, what's good to eat and what is not, how to take care of the stuff you own, repair my computer, use a smartphone or any computer software & games, interacting well with other people, and pretty much everything else of value to my life and living, I learned on my own from my personal life experience.

None of it was organized or highly structured and no real discipline was needed, as it evolved by just being exposed to various needs, situations and information. Noting organized, no real discipline, just being exposed to various situations and information.

Education Is NOT The Same As Schooling

Discipline May Ruin The Experience

Imagine a child needing to take special classes to learn how to play a game, whether an online game or hide and seek. Of course, it sounds ridiculous to suggest putting kids through all of that, so then ask yourself why do we force them to take classes to learn chemistry or mathematics?

I played football (soccer in the US) when I was a kid, and I played a lot. My friends and I were always on the football field from early in the morning until the sun disappeared from the sky. We made the teams and we learned and respected the rules, all on our own. We even organized small championships. Sometimes we focused on practicing free kicks or other football skills, but every time we did it from pleasure and a strong personal desire to improve our skills, not because we were made to do it.

In contrast to that, some of us were also members of the school football team; or even better, the town football team. It seemed like a privilege but it was nothing like that. Indeed, it felt good to know that I was on the school team, but it didn't feel good to experience it. Overall, there were more practices than games. We were made to wake up at a certain hour and go to practice, and after practice was over, many times we hadn't even played any football. When we did, we were all so tired that no one felt any pleasure in playing it. I was wondering all the time 'what am I preparing for and what is the purpose of all that?'. Ok, I did learn a few more football tricks from the coach and a few free kick tricks, but was that all? All that practice for such minor details?

My football skills did not improved overall because of all that practice, nor did my appetite for football. If anything, the contrary is true.

This was the moment when I began to question the point of such organized discipline. If we can organize each other in a manner that suits us all and we create positive enjoyable results because of that, why add this rough training?

I loved football and I played it pretty well, but all because I played from pleasure: when I wanted, how I wanted. Perhaps the training would have helped if we were allowed to work as actual football players, have 3-4 games a week and, as a result, needed to be in good shape to cope with all that effort.

This is a very good point to consider because this is what school does with physics, mathematics and biology. It makes the training tough and provides no practice at all, only to prepare you for a potential entry-level job. What if you let people play with those topics without telling them when and how to? Or even better: what if there were no separate physics, mathematics or biology studies and instead we rely directly on life experience, which is continually becoming more and more knowledgeable and scientific as we progress? It probably sounds far fetched, but stay with me. I will try to explain how it could work much better than today's approach.

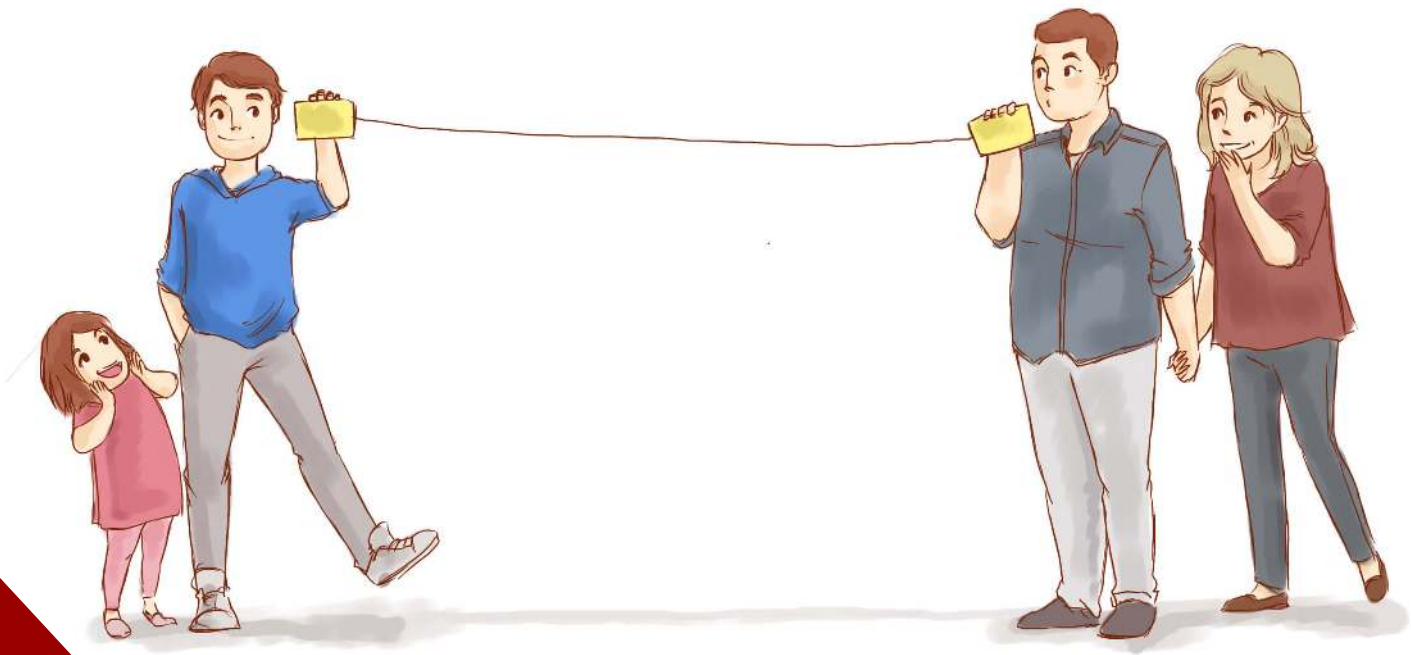
Organized Chaos

I remember how curious I was when I was 11. I asked my father all sorts of questions: How does a video camera work? What is the biggest animal ever to exist? How many people are in the world?

I also remember the holidays when we would travel long distances and my father had a map with him, basically guessing what would be the best track to follow. We stopped from time to time to figure out the best route to destination.

My mother knew many food recipes. From cakes to dinner, it was always a winner :). She even had an old book from my grandma with many such recipes and when she needed help, she would ask a friend or just improvise. She even taught my sister and I how to cook certain foods.

Although my father had some good answers to my questions when I was curious and he always reached the destinations when we traveled, and although my mother knew many food recipes and taught us how to cook some basic foods, the approaches they relied on are all obsolete now. This is not because I want it so, but because we now have computers and the internet.

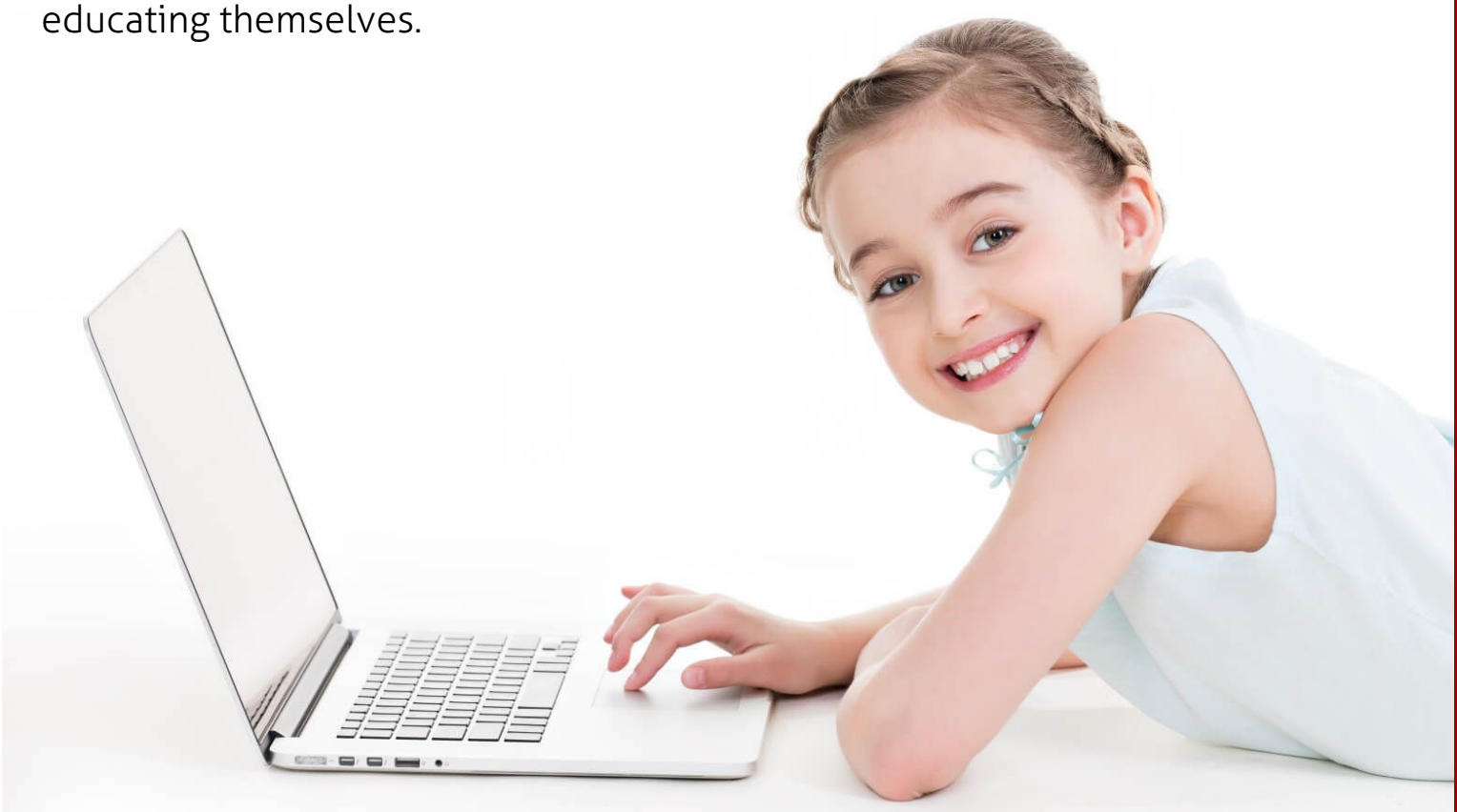


Whenever I wonder about anything, I search on one of the many search engines and I will get a very knowledgeable answer for everything. If I want to reach a destination, I use one of the many online or offline map navigators. Not only will I learn what roads to follow, it will also guide me step-by-step all the way through to my destination. Plus, if I ever want to cook something, the internet is so full of recipes that you can easily learn how to cook a chicken 2000 different ways.

And even with all of that at our fingertips, it doesn't take away from the human experience. With the internet and the many devices designed to access it, people become more knowledgeable and of course, the feedback we receive from our fellow humans is continually improving with our increasing knowledge.

The internet is a great example of how people can teach each other pretty much everything, without strict classroom schedules or structured rules. From how to create websites and code programs, to how to make your own solar panels or how to ski, you can find anything you want to know in multiple flavors.

This ability has given rise to "mutants" - the ones who didn´t follow the rules of the educational system, yet have created tremendous value for humanity by educating themselves.



MUTANTS: WIKIPEDIA

WikiPedia is a collaboratively edited, multilingual, free Internet encyclopedia supported by the non-profit Wikimedia Foundation. Wikipedia's 43+ million articles in 250 different languages, including over 5.3 million in the English Wikipedia, are written collaboratively by volunteers around the world. Almost all of its articles can be edited by anyone having access to the site. It is the largest and most popular general reference work on the Internet, ranking seventh globally among all websites on Alexa, and having an estimated 500 million monthly readers worldwide.

Wikipedia was launched on January 15, 2001, by Jimmy Wales and Larry Sanger.

Wikipedia's departure from the expert-driven style of encyclopedia building and the presence of a large body of unacademic content have received extensive attention in print media. In 2006, Time magazine recognized Wikipedia's participation in the rapid growth of online collaboration and interaction by millions of people around the world, in addition to YouTube, Reddit, MySpace, and Facebook.

Wikipedia has also been praised as a news source due to articles related to breaking news often being rapidly updated there. A 2005 investigation in Nature showed that the science articles they compared came close to the level of accuracy of Encyclopædia Britannica. - (source)

Imagine, instead of writing your homework for school, which will be lost eventually, that you write up articles for wikipedia

WIKIPEDIA
The Free Encyclopedia

MUTANTS: LINUX

Linux is a Unix-like computer operating system assembled under the model of free and open source software development and distribution. The defining component of Linux is the Linux kernel, an operating system kernel first released on 5 October, 1991 by Linus Torvalds. Linux was originally developed as a free operating system for Intel x86-based personal computers.

It has since been ported to more computer hardware platforms than any other operating system. It is a leading operating system on servers and other big iron systems such as mainframe computers and supercomputers: more than 99.6% (including top 385) of the fastest supercomputers run some variant of Linux. Linux also runs on embedded systems (devices where the operating system is typically built into the firmware and highly tailored to the system) such as mobile phones, tablet computers, network routers, building automation controls, televisions and video game consoles; the Android system in wide use on mobile devices is built on the Linux kernel.

The development of Linux is one of the most prominent examples of free and open source software collaboration: the underlying source code may be used, modified, and distributed—commercially or non-commercially—by anyone under licenses such as the GNU General Public License.- (source)

You can also watch the *Revolution OS* documentary to learn more about Linux.

How Linux is Built


1991 - 2011

MUTANTS: KHAN ACADEMY

Khan Academy is a non-profit educational website created in 2006 by educator Salman Khan, a graduate of MIT and Harvard Business School. The stated mission is to provide "a free world-class education for anyone anywhere.

The Khan Academy started with Khan remotely tutoring one of his cousins interactively using Yahoo Doodle images. Based on feedback from his cousin, additional cousins began to take advantage of the interactive, remote tutoring. In order to make better use of his and their time, Khan transitioned to making YouTube video tutorials. The website supplies a free online collection for more than 5,000 different topics like mathematics, history, healthcare, medicine, finance, physics, chemistry, biology, astronomy, economics, cosmology, organic chemistry, American civics, art history, macroeconomics, microeconomics, and computer science.

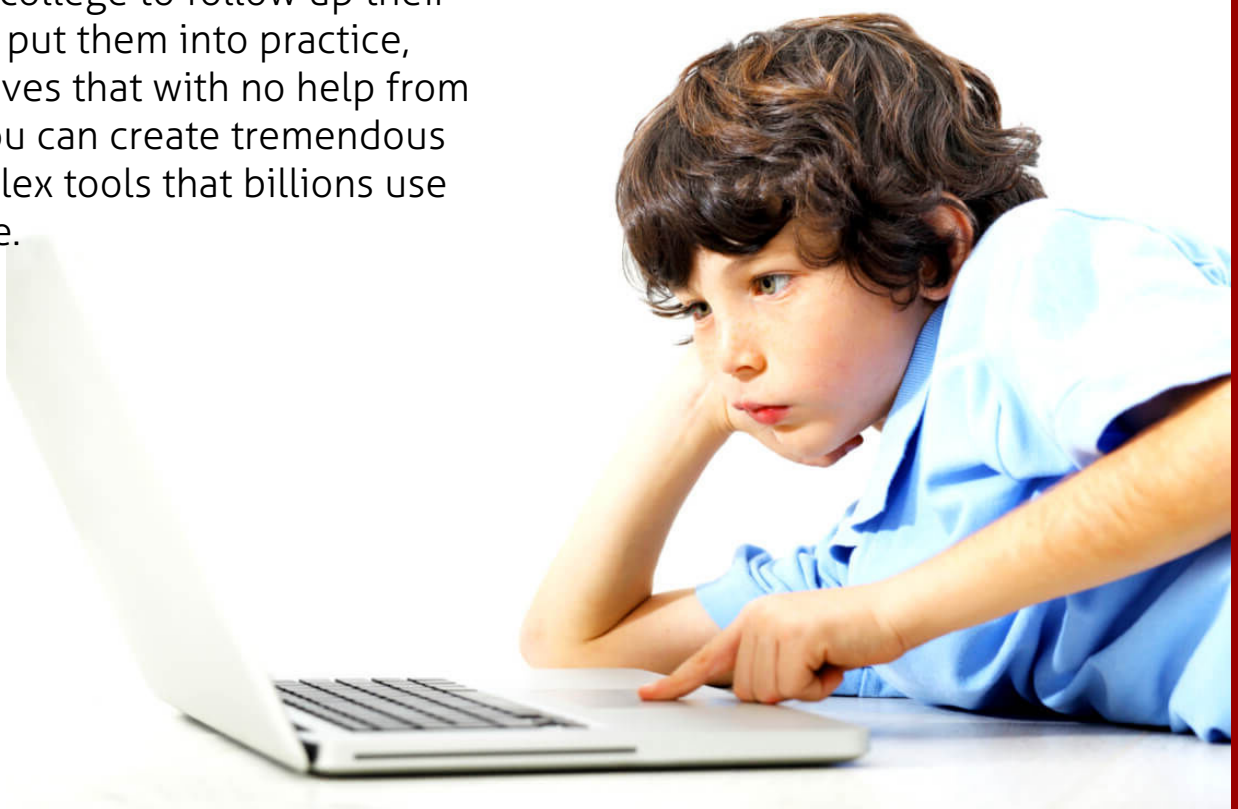
Khan Academy has eclipsed MIT's OpenCourseWare (OCW) in terms of videos viewed. Its YouTube channel has almost one billion total views, compared to MIT's 10 million. It also has almost three times as many subscribers as MIT's.

The organization's content has been translated to other languages for accessibility. There are also translations to the content contributed by volunteers. As of November 2016, Khan Academy has seven official websites in other languages, and 20,000 closed-captioned translations on videos.

In addition, Khan Lab School, a school owned by Khan Academy, was opened on September 15, 2014 in Mountain View, California." (source)

Additional examples are so plentiful that it's almost a common factor amongst all Internet-Computer and Collaboration based projects. Facebook, Napster (watch the *Downloaded* documentary), Google (watch the *Game Changers* documentary) and Windows (watch the *Triumph of the Nerds* documentary) are just a few examples of teenagers using computers and the internet alone to develop new advanced tools that are now used by billions worldwide.

And many of these teenagers quit school or college to follow up their ideas and put them into practice, which proves that with no help from school, you can create tremendous and complex tools that billions use worldwide.



A 16 year old boy invented a cancer test he claims to be 100 times more sensitive & 26,000 times cheaper than traditional tests:

"I created a new way to detect pancreatic, ovarian and lung cancer that costs three cents and takes five minutes to run.

My breakthrough came in the most unlikely of places. It came in high school biology class -- the absolute abhor of innovation. (Laughter). I basically smuggled in this article on single walled carbon nanotubes . I had been dying to read.

A single walled carbon nanotube is essentially an atom-thick tube of carbon. That's -- just imagine a really long pipe. It is one 150th of the diameter of your hair. And it has these amazing properties. They are super, super cool. They are like the superheros of material science. Then, I was trying to roll over this concept of -- we were learning about -- antibodies. Antibody is basically a lock and key molecule that attaches specifically to a certain protein, in this case, the mesothelin. I was trying to combine that specific reactivity to how carbon nanotubes are really sensitive to their network of the 3 dimensional structures of their network. Then, it hit me. What I could do is I could put an antibody in this network such that would react specifically to the mesothelin. Then, also I would change its electrical properties based on the amount of mesothelin, enough so that I could measure it with the 50 dollar Home Depot ohmmeter. So, pretty easy.

Just as I had this epiphany, my biology teacher storms up to me, because she spots me reading this article, snatches it out of my hand, because I was supposed to be writing an essay, then, storms off and gives me a lecture.

After class, I finally convinced her after a huge lecture on how I should respect her in her class.... I finally got my article back because that is all I really wanted from her. (Laughter) "

Watch the entire video from TED presentation:
“ For A World Without Cancer: Jack Andraka "

Elon Musk, the creator of PayPal and now the men behind TESLA, HYPERLOOP, SPACE X and SOLAR CITY, when asked how he can run such big companies, where is his expertise coming from, he always responds: “I read many books”.

So the internet and computers are just a means to reach a more abundant world of information. Non-experts who have made huge contributions to humanity have been doing this since the era of Aristotle, when the first school systems were invented. However, their purpose was to offer educational materials for those who were interested in finding more about the world. Actually the term “school” means “leisure” in ancient Greek (source) , which is quite the opposite of what school has now become.

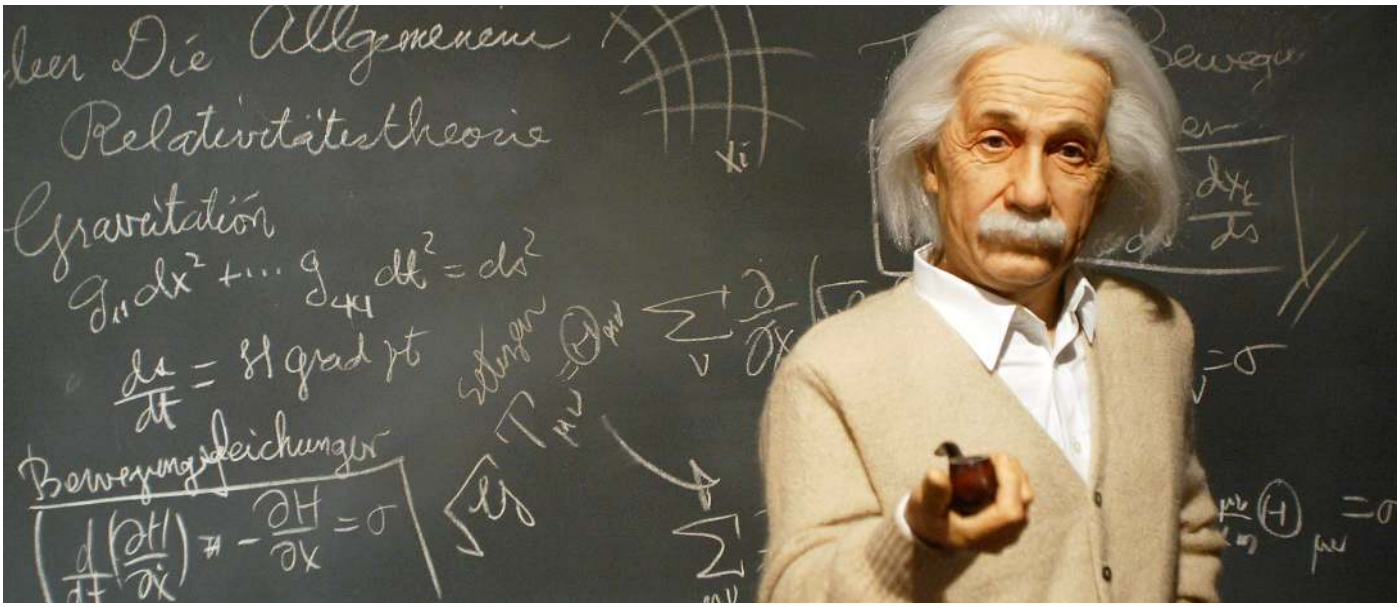
CURIOUS INDEPENDENT "DINOSAURS"

Ask **Isaac Newton** where he got his education, because he didn't begin school until the age of twelve and, at the age of seventeen, was removed from school. Later on, he did go to Trinity College, which was shut down soon after Newton had obtained his degree, but that didn't stop him from becoming one of the most brilliant people in the world. He continued his own studies privately at his home in Woolsthorpe over the next two years, bringing together the development of his theories on calculus, optics and the law of gravitation (source) .

Watch these two documentaries about Newton to learn more about him: *Isaac Newton The Last Magician* and *Newton's Dark Secrets* .

Or ask **Albert Einstein**, who didn't like school much at all, how he came up with the theory of relativity or other conceptual aspects of his astonishing work. His thoughts about school: "The spirit of learning and creative thought were lost in strict rote learning."

"Although Einstein is now considered the epitome of genius, in the first two decades of his life, many people thought Einstein was the exact opposite. Right after Einstein was born, relatives were concerned with Einstein's pointy head. Einstein also failed to impress his teachers. From elementary school through college, his teachers and professors thought him lazy, sloppy, and insubordinate. Some of his teachers even told him that he would never amount to anything.



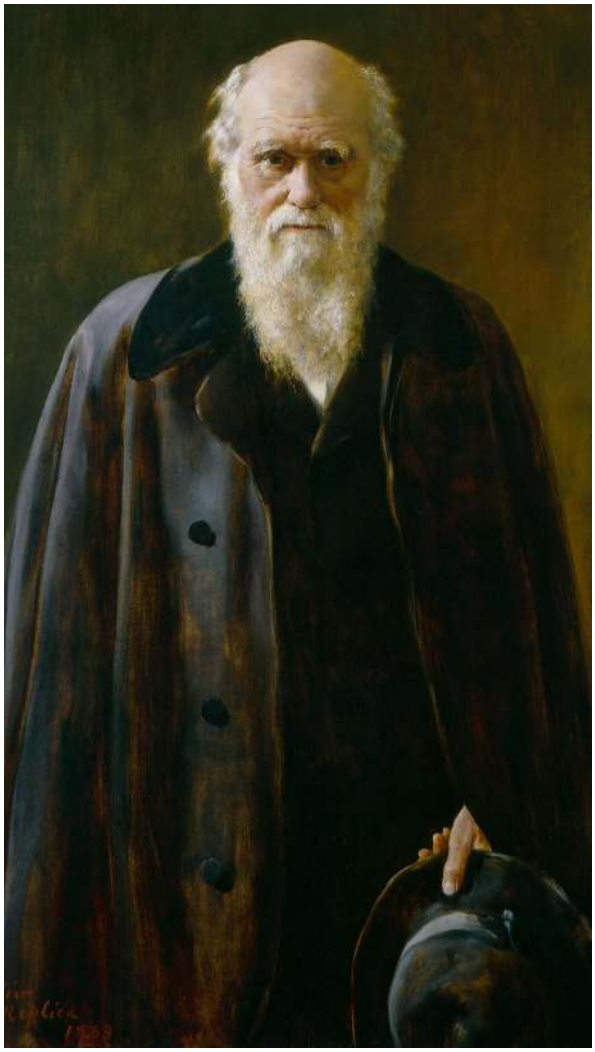
What appeared to be laziness in class was really boredom. Rather than just memorizing facts and dates (the mainstay of classroom work), Einstein preferred to ponder questions such as what makes the needle of a compass point in one direction? Why is the sky blue? What would it be like to travel at the speed of light?

Unfortunately for Einstein, these were not the types of topics he was taught in school. Although his grades were good, Einstein found regular schooling to be strict and oppressive. Things changed for Einstein when he befriended Max Talmud, the 21-year-old medical student who ate dinner at the Einstein's once a week. Although Einstein was only eleven years old, Max introduced Einstein to numerous science and philosophy books and then discussed their content with him. Einstein flourished in this learning environment and it wasn't long before Einstein had surpassed what Max could teach him.

For seven years, Einstein worked six days a week as a patent clerk. He was responsible for examining the blueprints of other people's inventions and then determining whether or not they were feasible. If they were, Einstein had to ensure that no one else had already been given a patent for the same idea.

Somehow, between his very busy work and family life, Einstein not only found time to earn a doctorate from the University of Zurich (awarded in 1905), but also found time to think. It was while working at the patent office that Einstein made his most shocking and amazing discoveries." (source)

Charles Darwin was a very curious kid who collected animal shells, postal franks, bird's eggs, pebbles and minerals, but his father once told him "You care for nothing but shooting, dogs, and rat-catching, and you will be a disgrace to yourself and all your family."



When in college, he attended the official university lectures, but complained that most were stupid and boring. He was disgusted by the dull and outdated anatomy lecture.

Although he attended a medical university, he had brought natural history books with him, including a copy of A Naturalist's Companion by George Graves, bought in August in anticipation of seeing the seaside, and he also borrowed similar books from the library. Darwin wrote home that "I am going to learn to stuff birds, from a blackamoor... he only charges one guinea, for an hour every day for two months".

Without his curiosity of learning by himself, Darwin probably would never have come up with the Theory of Evolution. (source).

Watch these three documentaries to learn more about Darwin: *Darwin's Dangerous Idea* , *Darwin's Secret Notebooks* and *Charles Darwin and the Tree of Life* .

Louis Pasteur "was an average student in his early years, and not particularly academic"... "In 1839 he entered the Collège Royal de Besançon and earned his BA degree in 1840. He continued there for a BSc degree with special mathematics but failed in 1841. He succeeded in 1842 from Dijon with a poor grade in chemistry." (source)

Nikola Tesla: "When exam time came, Tesla was unprepared and asked for an extension to study, but was denied. He never graduated from the university and did not receive grades for his last semester " (source)

Watch *Tesla Master of Lightning* documentary to learn more about Tesla.

Galileo: " Except for mathematics, Galileo Galilei was bored with university. Galileo's family was informed that their son was in danger of flunking out. A compromise was worked out where Galileo would be tutored full-time in mathematics by the mathematician of the Tuscan court.

Galileo's father was hardly overjoyed about this turn of events, since a mathematician's earning power was roughly around that of a musician, but it seemed that this might yet allow Galileo to successfully complete his college education. However, Galileo soon left the University of Pisa without a degree. " (source)

Watch *Galileo's Battle for the Heavens* to learn more about Galileo.

There is no shortage of such examples of people who became "experts" by learning on their own and, in some cases, outright rejected the school system that was holding them back.

LET'S BUILD IT: CITIZEN SCIENCE

The more access to information and freedom that people have in society, the more Einsteins it will create enriching in turn the society as a whole.

Citizen science (also known as crowd science, crowd-sourced science, or networked science) is scientific research conducted, in whole or in part, by amateur or nonprofessional scientists, often by crowdsourcing and crowdfunding. Formally, citizen science has been defined as "the systematic collection and analysis of data; development of technology; testing of natural phenomena; and the dissemination of these activities by researchers on a primarily avocational basis" (source)

These groups of people with no particular 'formal' training in any of the fields they study often come up with amazing results and their interests expands from the observation of cyclic events of nature, such as effects of global warming on plant and animal life in different geographic areas, to astronomy or protein folding.

One great example is Foldit and the idea of integrating the video game notion to benefit humanity and create more such "citizen scientists".

If you think these "citizen science" efforts cannot be considered reliable, think again. For example, a 2013 study shows that the results coming from citizen science rival experts in analyzing land-cover data.

A classic example of this approach is provided by Tim Gowers, who posted in his blog a mathematical question and within a matter of days, the commenters had solved it. This gave birth to the Polymath Project, an online effort to solve some very complicated mathematics problems. In this TED talk (video), Michael Nielsen advocates for Open Science and the Polymath Project is one of his examples. Also watch this TED video about the recent (2015) citizen science projects.

Here´s a list of projects driven by citizen scientists. Read more about crowdsourcing on wikipedia.

LET'S BUILD IT: GAMING

Rethink the role of gaming in education. Knowing how easily people are transported by 3D movies, even by normal movies, into experiencing diverse situations only with their minds, imagine using such technologies to virtually explore planets, the human body, or just taking a journey through the history of science.

New technologies like Virtual Reality headsets such combined to other such VR technologies can create a virtual exploration of real, yet artificial worlds.

Imagine people killing viruses instead of random nonsensical game characters; Imagine solving the biological aging puzzle or the cancer puzzle instead of puzzles that have no effect in the real world; Or imagine that your teachers are the best players helping you in a strategy game, but instead of building random buildings for example or environments, you're building real models that can be applied in the real world.

Besides Foldit, there are other examples of such games:

EteRNA : in EteRNA, the goal is to coax RNA molecules into specified shapes. The best designs are then synthesized in the lab and scored.

EyeWire : is attempting to map the brain, starting with the connections between retinal neurons.

Phylo : a player might not identify Phylo as anything more than a casual game. In actuality though, the different colored squares represent DNA nucleotides and the game is using human pattern recognition to perform multiple sequence alignment.

The Cure : is working on developing a genomics-driven predictor of breast cancer prognosis.

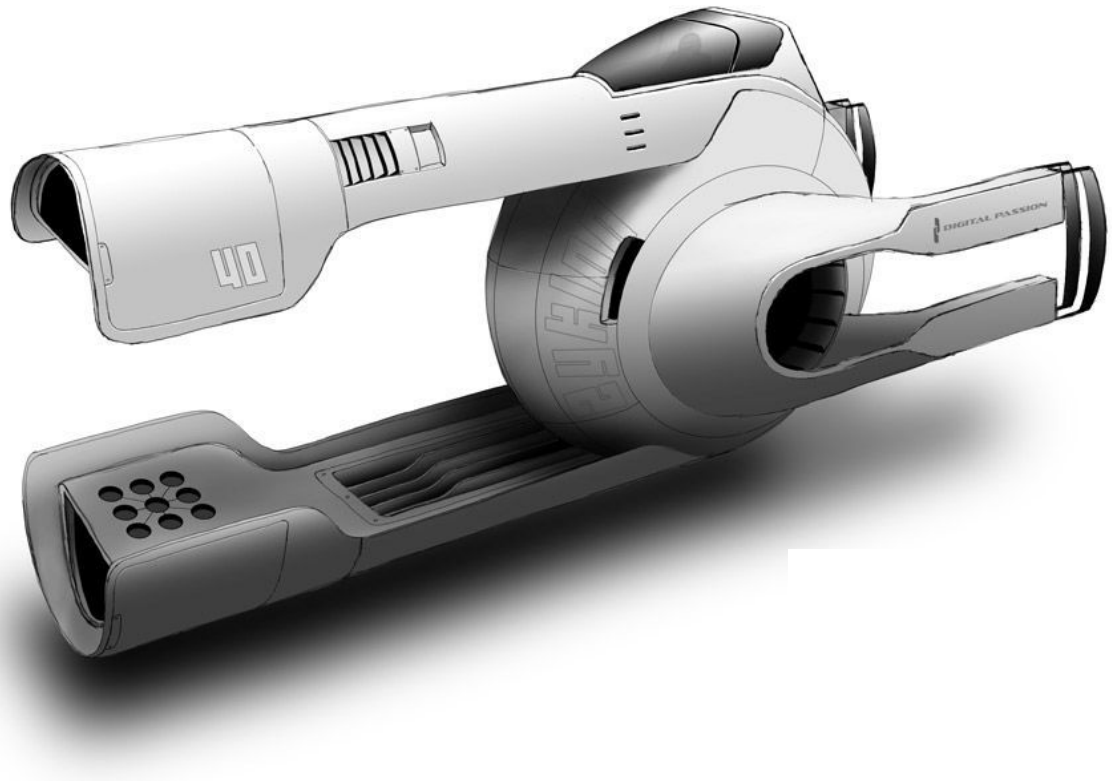
Citizen Sort : is a collection of three different games that are used to classify and characterize different animal species. This sorting allows researchers to identify and name newly discovered animals.

There are even games that use real-life organisms for educational purposes. (link1)(link2)

LET'S BUILD IT: SIMULATION

Another interesting idea is to combine the human experience with knowledge and technology. Imagine a spaceship on Earth, one that perfectly simulates a trip to nearby planets.

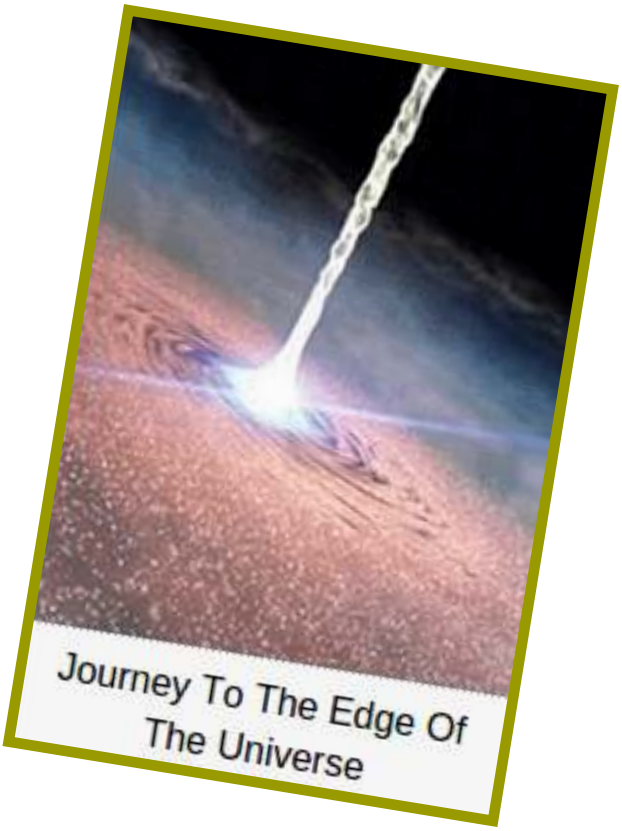
So instead of being connected to a virtual world through a pair of smart glasses, you can experience it as if it was real. Imagine you and your friends embarking into this Earth grounded yet futuristic spaceship, and take a trip to the nearby planets for a few weeks. Although you remain on the ground, I bet you will quickly forget that and feel like you are experiencing a real trip to Mars or to the edge of the Universe. Or imagine a journey insie the human body.

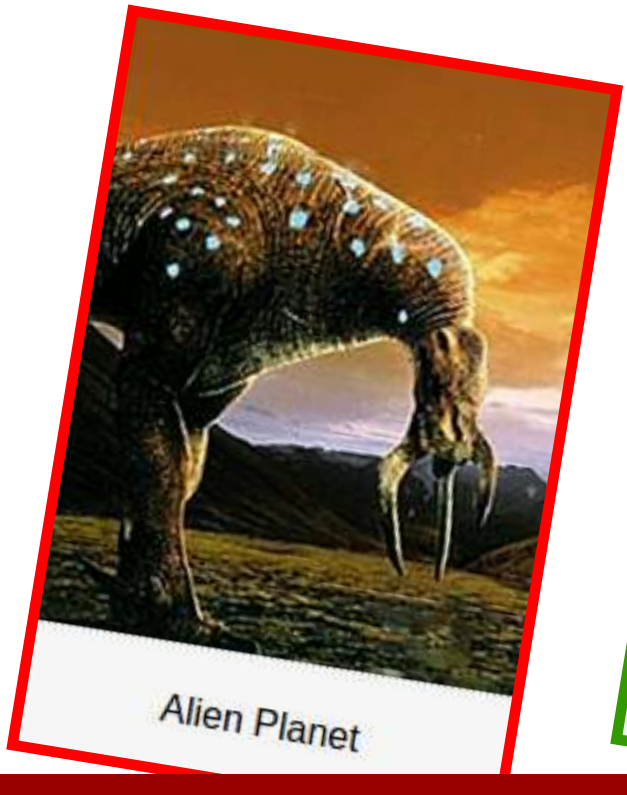


Within such a simulation, your interaction with your friends - and even with the planets, nebulas or stars seen through the viewport - would seem quite realistic, since if you were to take such a journey in reality, the 'spaceship' would always be between you and the rest of the universe, with you experiencing it through the spaceship window.

Humans can simulate scenarios so well that many people watch movies as if they were part of the action, or remember your childhood when you imagined you were a superhero and your home was your spaceship. We often re-experience such feelings when playing with our children.
You can explore tons of virtual environments as if you were there, in the ship that you are already cruising, looking and exploring the real world.

Watch these amazing documentaries and imagine how would it be to have been in such a virtual spaceship concept travelling across the Universe - *Journey to the Edge of the Universe*, *Alien Planet* and *Voyage to the Planets*.





LET'S BUILD IT: A.I. AS TEACHER

If the power of games and the creativeness of crowds isn't enough to provide for an educated society, then A.I. should help a lot, like for example IBM's Watson.

If you're not familiar with Watson software system and you don't have the time to learn more about it, then just keep in mind few facts about this intelligent machine: the system was brought onto the US-based game-show Jeopardy against two of the best players in the world and won by a huge margin, proving how well he understands and manages human language and concept abstraction. Now it is being used in medical healthcare to research hundreds of thousands of scientific papers and prescribe treatments for patients (source). "He" is basically a very smart AI (artificial intelligence) machine that is becoming more and more intelligent with each passing day.

Perhaps you've heard of Siri or Google Now (video) though, small scale AIs with which you can basically talk using your smartphone to give them instructions to do various software tasks: send an email, find a route, schedule an appointment, or even ask what is the distance from Earth to the Moon.

Now combine the power of Watson with the wide accessibility of smartphones and high speed internet with abundant information, and you have a teacher in your pocket. Actually you have all teachers combined in your pocket.

Why struggle to memorize facts when every fact known to humanity is at your disposal? With near-instant feedback from such a powerful AI, you can bet people will become more and more informed. Such technologies can also be used with VR headsets to be more close to reality than a digital game.

But the power of Watson is zero without the vast human knowledge from which Watson selects, interprets and learn. So, people learn new information and feed sources like Wikipedia and such. AI like Watson then learns from them and becomes an expert in many fields, which in turn then help make people smarter.

One day you may be able to tell Watson what kind of a website or app you want in a natural, spoken language and have him build it for you using any programming language you prefer or whatever is best to use for that new resource. And such an app will be your tool for learning even more about the world.

Think about news being presented to you in the way that you understand them. Let´s say you like sports and the AI knows that. He will try to present the news clearly by making sports analogies so you understand it better. Short movies and stories can be created with the use of AI and be customize for individuals to better grasp the information.

LET'S BUILD IT: SEEMINGLESS INTEGRATION

Another very powerful and efficient idea is to embed the contribution of people to education by seemingless methods and technologies.

Example: If you have signed in to basically anything on the Internet these days, then you're most likely familiar with the whole reCAPTCHA program. That's the thing where you have to prove you're not a spambot by typing some nearly unreadable words into a text box:

What you may not know is that by using it, you have most likely contributed to the translation of thousands of old books and documents. In 2009, Google and a couple of other companies had a problem. They wanted to digitize years of old newspapers and books, using software that can "read" the print (OCR or optical character recognition) and then convert it into actual text. But even the most advanced computers had problems reading some of the poor quality scans because the text was smudged or crooked, or in a font that has been out of use for years.

So, they simply placed those unreadable words in between you and what you want to access, and told you that you'd need to translate them before going any further. Spambots can't read them because reCAPTCHA uses only the words that the computers already said they couldn't read. It's as brilliant as it is simplistic.

The project has been a huge success, managing to digitize 20 years of The New York Times daily newspaper in just a few months for example, by letting Web surfers decode the hard bits. It is estimated that websites display 200 million reCAPTCHAs a day.

Also consider the idea of "Distributed computing", which has been used to discover new planets, find Mersenne Prime Numbers (GIMPS) or process radio signals to detect alien transmissions (SETI@home). The process is very simple. People all over the world install a screensaver that runs some calculations for these projects when their computers are idle. Thousands of computer hours have been used in this way for research.

For a list of such projects, visit Wikipedia.

LET'S BUILD IT: SMART MEDIA

You may think that mathematics, physics, biology or any such disciplines are so hard for people to fully grasp and because of that few engage in such topics. What if our society were to experience just one single change: that science becomes the coolest thing for people to discuss? Instead of discussing politics, music, movies or sports, people would find scientific subjects as their main interest. How would that change society as whole?

People gossip about other people all the time, they know hundreds of movies and remember thousands of situations from those movies along with the characters presented. They watch so much sports and memorize many complex statistics. People remember jokes and folks, celebrity gossips and far away friendships. There is no reason to think that people are not able to retain lots of information and use it for all kinds of purposes. They often become fanatic about a football team, a religious dogma, a musician or a Hollywood star. But what if they instead become fanatic about atoms, galaxies, DNA, stars, the history of science, mathematics, chemistry and so on? How would that change us as a society?

Engaging in conversations and getting feedback (reinforcement) seems to have a deep impact on retaining and understanding information. I always wondered how would it be if every time I go out with my friends, instead of discussing about a football team, how wasted they were last night, about movies or a crime they saw on tv, we instead discuss the most recently discovered exoplanets, relativity (because it is quite a hard concept to grasp), new technologies, or the universe as a whole. **Just think about it.....**

Movies and tv shows have so much success in the world, but the majority of them are based on fiction and gossip, turning their viewers into beings with little or no grasp of the amazing reality around them.

What if movies were about real scientific events? What if tv shows were more factual than fictional? After all, if you want endless stories and complex ideas, just look at reality. From quarks to quasars; living cells to black holes; Galileo to Einstein, the real world's story is far beyond any story, movie, book or idea.

Imagine instead of some invented drama movie, we choose to watch a movie about the life of Nikola Tesla, or instead of science fiction movies, we watch movies about the discovery of quarks, atoms and DNA (the building blocks of us and everything around and inside us).

The drama that Galileo lived through to prove that the sky isn't perfect and the curiosity which led him to first observe a "wandering star" through a telescope and realize it was a world like ours; ancient greeks like Aristotle who tried to figure out the word around them; the life and findings of Copernicus and Kepler; the mind blowing discoveries of Darwin which led to the theory of evolution; Einstein´s quest to prove that space has a shape; the invention of chemistry and biology; the discovery of tectonic plates and how the Earth moves beneath our feet although we don't normally feel that; Edward Hubble's discovery of our galaxy being just one of billions of galaxies out there and that the Universe is continuously expanding at an ever-increasing rate; the existence of so many creatures in the world as well as the ones have become extinct (dinosaurs for instance); the revelation of quantum physics; the discovery of neutrinos; the development of the many amazing technologies which contributed to the human quest of discovering the world...

I bet many people don't even have the slightest idea of the fascinating complexity of our world; the drama that unfolds behind scientific endeavor; the "out of this world" findings; or the excitement of new discoveries.

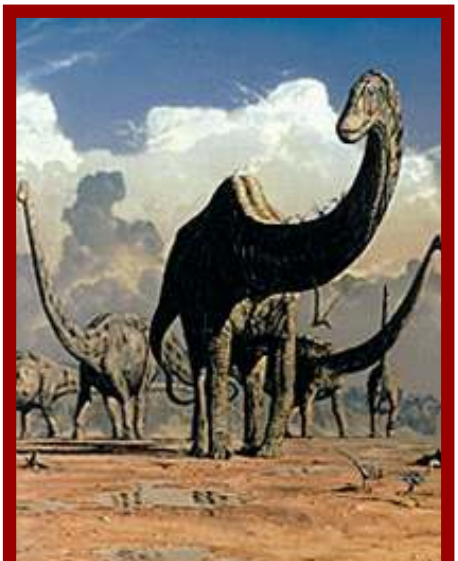
I am so curious of how humanity & our surroundings would evolve if exposed to such media materials as much as the fake information we are provided.

EXAMPLES: Here are few examples of such rare movies. Here are some CGI (animation-based) movies transformed into "real animations" presenting real creatures: Planet Dinosaur, Walking with Dinosaurs and Walking with Monsters. And these are some great ideas for how TV shows could be: Walking with Cavemen, Chased by Sea Monsters, Land of Giants, The Giant Claw, Prehistoric Park.

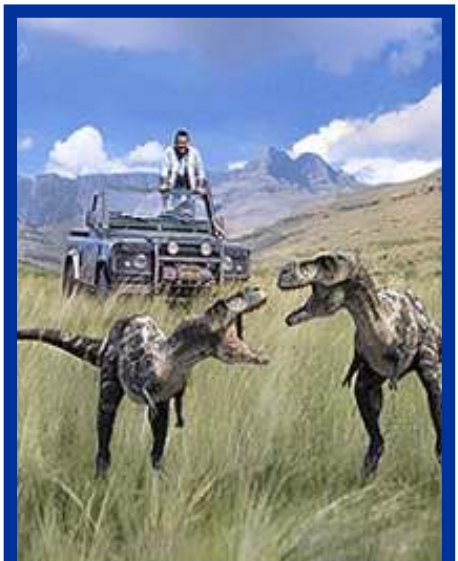
Land Of Giants

Walking With Cavemen

Chased By Sea Monsters



Walking With Dinosaurs



Prehistoric Park

Planet Dinosaur

Why stop at movies and TV shows? What about cartoons depicting real properties of nature?

Consider atoms and how hard it seems for people to remember their properties or how they react with each other. What if you transform them into cartoon characters like these, and their chemical properties into 'powers'. The way they interact with each other can be based on the same principle.

91 PROTACTINIUM

Protactinium is very scarce and only a small amount is available for testing. Pa

2 HELIUM

Helium is a nonreactive element and the lightest of the noble gases. He

29 COPPER

Copper is a red-colored metal that is a good conductor of electricity. Cu

53 IODINE

Iodine gives off a violet gas and is used by doctors to disinfect wounds. I

more here

Or if kids were to watch amazing documentaries like *Planet Earth*, *Frozen Planet*, *Nature's Most Amazing Events*, *Life* or *The Blue Planet* instead of nonsense TV shows. Look closely at the news today and you will rarely find science there. What if the news were more science-oriented, removing all the crimes, violence or nonsense gossip from their menu? I am so curious how a world influenced by such a media would look like. Aren't you ?

A Constant Play

When people hear the word "play", they usually associate it with childish play or with something that is not serious. But play is actually the engagement with life and situations in life which should be experienced in a comfortable manner. That´s why it is playing and not struggling. When we were kids, we eagerly explored the world around us. I remember when sometimes I would close my eyes for an entire day to try to feel how a blind person experiences life. Sometimes I wouldn't use my right hand, just to see if I could handle daily tasks with only the left hand. I played with my friends all day long and sometimes we observed ants and put small obstacles in their path to see how they would react.

More recently in my life, this idea of "play" hasn't lost its meaning; just some of its means. I now play with computer programs and, because of that, have learned how to design websites. I read to explore new ideas and sometimes enjoy snorkeling to observe marine life and learn more about it.
Because of this attitude of 'playing', I was able to create a 14-hour documentary (TROM) by myself. I wrote the script, translated it from Romanian to English, did all of the video-audio-photo editing, developed the website, and doing all of the promotion for it. As a result of it being so successful, I´ve met many new wonderful beings and felt encouraged to work on other such projects like VideoNeat: a website full of lectures, documentaries and science-based movies.

So am I a movie producer, script writer, journalist, web designer, and so on? How can I do SEO, design, video-photo-audio editing, manage projects, and much more? I never learned these things in school, yet I am able to do them and even get huge positive feedback. And I am a 'light' example. There are people doing mind blowing projects and accomplishing extraordinary tasks with no help from school; just out of the pure excitement and enjoyment of "play".

The present educational system seems to be completely obsolete: its methods of mandatory learning, the unresearched means of teaching, the mandatory schedule and the stigmatization of children through grades and tests. Money also plays a huge role in education. The school books and other educational materials are very hard to update with new information because of the costs involved. So, what is taught in school today may already be very outdated. Also, teachers and students seem to be primarily motivated by the money and not by learning. As a result, teachers may not care about their teaching methods nearly as much as their monthly paychecks, while students may only care about getting a diploma or degree in order to get a better paying job, or at least whatever job it is so that he or she can survive in this world. This entire education system completely kills the joy of exploring. Actually it doesn't even intend to care about that.

Imagine not being forced to go to school. Wouldn't you take the "play" idea more seriously? Wouldn't you be curious exploring the world? Learning more; creating interesting projects; helping others; and so on?

As we've seen, the means by which you can do that are so plentiful. With an internet connection today, you gain access to any human knowledge in multiple flavors.

We can think of such a world where, since infancy, every human being is exposed to a smart environment: smart technology and powerful scientific information. The play would never end and he/she will not only have the means of fulfilling their hunger for knowledge but also create new means by which it can be accomplished. The entire human race, connected through networks like the internet using multiple devices like computers, tablets, smartphones, etc. and multiple means, feeding a global human knowledge base which, in turn, feeds them back and creates continual widespread innovation.

We all must be citizen scientists and the means through which we play should be plentiful, not just tasteful for some. Whether it's games, TV shows, extraordinary CGI in movies, lectures, explorations, conversations, the leisure to explore alone or with groups of like-minded people through sport, music, dancing, or whatever suits you, you should be allowed to choose how and when you want to play and, through today´s amazing technology, you will create value no matter what. Some more than others; some faster than others. Some will be first; some may be the last. Some may create the knowledge; some may enjoy taking it in, some may do both.

In my mind, it shouldn't matter what you explore or when you explore it. It's like the internet: the abundance of people ensure that there are more than enough people researching all necessary fields of science. Some may still enjoy this present schooling system and they should be able to attend one. We may see experts in defined fields (biology, astronomy, etc) and also those who know a good amount from each field. We may see teachers and students becoming the same entity and we may also be assisted by powerful AI.

As I see it, education will (or at least should) become this chaotic soup, but organized at its deep core, with people from all around the world being more and more engaged in decentralized knowledge seeking and the continual production of it.

When people have so many means to get educated and the information becomes more and more scientific, their experience and expertise can be easily harnessed for all of humanity. That, in turn, continuously feeds more and more advanced knowledge back into the system. What a fantastic feedback loop!

But as long as people are forced to get a job to survive in this world, it will remain as a forced education, which is nothing more than a form of voluntary (and in most cases involuntary) mental & physical enslavement that gives up on the most important aspect of being human: curiosity.

In a world like the one proposed by us (trade-free), the methods of creation and naturally harnessing the knowledge of all people will explode. What would be the result I'm wondering?

I will leave you with this great short documentary that sums it all up pretty well

Besides the games and examples I provided in the article, there are many websites where you can learn for free about almost anything, while YouTube offers tons of educational channels plus a special tool to help you make sense of your interests.

A list of websites where you can get free education:

University of Reddit | EDX | Webcast Berkeley | Yale | Coursera | Alison

MIT | Udacity | GCF | OEDB | Academic Earth | World Mentory Academy

Watch Know Learn | The New Boston | Online Courses (dot)COM | Learners TV

Open2Study | University of People | Open Learning | Course Sites

WikiVersity | Video Lectures | Cosmo Learning | VideoNeat | Faculty Project

Google EDU

A list of educational YouTube channels:

American Museum of Natural History | ArgonneNationalLab | Asap SCIENCE

Big Think | Brusspup | C. G. P. Grey | Computerphile | Crash Course

Deep Astronomy | Deep Sky Videos | Diginfonews | DNews | Earth Unplugged

Explaining The Future | Household Hacker | Head Squeeze | Hack College

The King of Random | GOOD | Fw: Thinking | RSA Conference | Reel NASA

Physics Central | Peter Diamandis | Periodic Videos | PBS Off Book | Paul Elkins

PBS Idea Channel | Learn with The Open University | Numberphile | Test Tube

Nikola Danaylov | NewsyTech's channel | New Scientist | NASA | NASA Goddard

NASA Jet Propulsion Laboratory | MIT News Office | MITCSAIL | Inside ISS

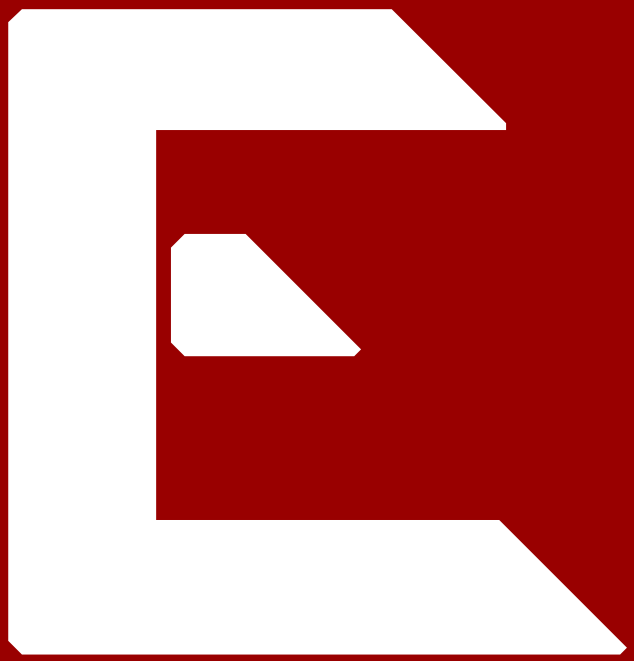
Minute Physics | Minute Earth | Jason Silva | James Randi Foundation | MIT

IFL Science | IBM Watson Solutions | World Science Festival | Vsauce | Vsauce 2

Vi Hart | Veritasium | The Spangler Effect | The RSA | The Good Stuff | TED-Ed

Smarter Every Day | Sixty Symbols | Singularity University | Singularity Hub

Shots of Awe | SENS Foundation | SciShow | Science Friday | Science Magazine



by Tio

WWW.TROMSITE.COM

---

support us ♡