



PREPARE STUDENTS FOR TOMORROW

Augmented reality, 3D printers, blockchain, Virtual Reality, Artificial Intelligence, and a plethora of other unforeseen technological advances will be reality in our students' lives

 KOEN TIMMERS

During the height of the space race in the 1960s, NASA scientists realized that pens could not function in space. They needed to figure out another way for the astronauts to write things down. So they spent years and millions

of dollars to develop a pen that could put ink to paper without gravity. But their crafty Soviet counterparts, so the story goes, simply handed their cosmonauts pencils.

This story illustrates a very important point in our current age of hyper-connected social media

consumption. Identifying the accuracy of information, bias, and confirming sources are skills that are more important than ever. The narrative is fake. It is "fake news."

False news stories, memes, and narratives that are designed to manipulate and sway opinion are more prevalent than ever. Are we

preparing students to determine what is real and what is fake? Are we giving them the skills to identify bias in the sources they use to consume information? Are we preparing them for the technological world we are sending them into?

Technology and innovation comes with benefits and drawbacks. It can transform our students' learning process but fake news and a lack of privacy can be a threat to our rights and democracy.

Augmented reality, 3D printers, blockchain, Virtual Reality, Artificial Intelligence, and a plethora of other unforeseen technological advances will be the reality in our students' lives. By 2020, 2.5% of all jobs will be lost due to AI. However, we will also see a 5% increase in newly created jobs. Those new jobs will require skills like complex problem solving, creativity, empathy and collaboration.

Many classrooms are still not focusing explicitly on those important skills. One problem is that teaching for different outcomes requires different ways of teaching. Teachers should step outside their comfort zone and not only instruct but also need to allow their students to step in the middle of their learning process. Students can learn from each other, from experts, videos and by doing.

Using the UN Sustainable Development Goals as a framework, I launched several educational projects focusing on several issues like refugees, climate action, sustainability and

gender equality. In the Kakuma project, 325 teachers across every continent are currently offering free education to refugees via Skype and in the Climate Action project 500 schools across 90 countries focused on climate change. As part of the project students across the world shared findings via videos and so they learned about important issues from their global peers rather than textbooks.

If we fail to give our student the skills they need to successfully navigate their reality, we risk a future where technology has undue influence over our lives.

Imagine this scenario: A woman gets into a self-driving car on her way home from work. In order to get the ride for free, she is forced to spend 20 minutes at the fast food restaurant that sponsored her trip. This has become a new way of advertising. After eating an unhealthy snack that she really didn't need, she passes the rest of the time by sharing a few highly biased, government sponsored news stories on her social media feeds. The government software that constantly analyzes social media data increases her social credit score by 2 points. She knows that her social credit score is close to being high enough to give her access to a better job. She checks her smartphone to see that her child has had a good day at school. Her son has been angry 2 times, stressed for less than 30 minutes, and spent a few minutes laughing at lunch time, all of which has been recognized by the facial

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recognition software and cameras that are located throughout the school. After arriving at home she thinks her front door unlocked with the neural sensors attached to her eyeglasses, and asks her home network to order dinner for her family.

This story is dangerously close to being a reality. In Beijing, people do have a social credit connected to face recognition. In Chinese schools, children's emotions are scanned every 20 seconds, and mind controlling devices are available on the internet for no more than \$250 USD. Schools need to transform and we need to question ourselves how. The home networks that we use like Amazon's Alexa and Google Home to turn on our lights, buy goods, and order food send our data to their companies every few minutes so that advertising can be better targeted to our desires.

Jane Goodall, world renowned primatologist and anthropologist, founded the Roots & Shoots programme with the goal of bringing together youth to work on environmental, conservation and humanitarian issues. In 2018, Roots and Shoots approached

WORLD EDUCATION

me to collaborate in developing Innovation Lab Schools in Africa and South America. Each lab school aims to offer a free quality education to children living in rural areas. The facilities are typically equipped with an internet connection, laptops and educational resources including Lego WeDo and Minecraft.

Apart from a local teacher, students will learn by having a Skype lesson offered by a global teacher community of one thousand educators. Students across the world will be able to connect to the local students in the Lab Schools, offering them powerful intercultural exchanges.

Students will be asked to work to improve their communities. They will have to explore, brainstorm, discuss, offer feedback, create, connect, reflect, present and share their findings. Far beyond studying and memorizing facts, children will find solutions and take action to improve their world. They will become content creators as well as content consumers.

In 2006, an approach called activity-based learning (ABL) was introduced in all primary schools in the Indian state of Tamil Nadu. This experiment eventually involved 37,000 schools and 40 million children. The program demonstrated that giving children the chance to work through the curriculum with their friends at their own pace and in their own style was hugely more effective than forcing them to follow a teacher's instructions with little autonomy.

The project involves a new curriculum based on the UN Sustainable Development Goals, a collection of 17 global goals set by the United Nations General Assembly in 2015. These goals have the power to end poverty, fight inequality and stop climate change. The curriculum is developed by 20 experts and makes connections with STEM (Science Technology Engineering and Math). It will be published for free in 10 languages at our website www.innovationsdglab.com and it will promote other learning approaches like collaborative learning and flipped learning.

In a world increasingly polarized by technology, self-driven global citizens are more important than ever. As Smith and Kang state: "Loneliness, addiction and polarization are linked. Community and empathy are the route Out". Formal education has the duty to teach tolerance and change students' mindsets concerning single use plastic, solar power, avoiding wasting clean water, calling out sexist language and behaviour, etc. A project-based learning approach allows students to brainstorm and reflect about these issues. In the end we want to offer the students a fair perspective and strong insights so at least they can make well informed decision when they are adults.

I and Roots and Shoots will start developing Innovation Lab Schools in Tanzania (Pugu and Kigoma) and South Africa. Future schools are planned in Nigeria, Uganda, Morocco, Palestine, Argentina and Brazil aiming to

offer 1 million children a free education by 2020.

The labs are sponsored by Skype in the Classroom, Empatico, Participate, I3 Technologies, Lego Education, PXL and Edukans. PXL university college will do research to ensure the project is making impact and how students perceive the project. Charlize Theron, actress; Helen Clark, former Prime Minister of New Zealand and Dr. Don Thomas, astronaut endorsed the project.

This project will both offer a free education to hundreds of thousands and offer a platform to teachers across the world so they can exchange thoughts, best practices and applications. By allowing students to use the UN Sustainable Development Goals to improve their world, they will be developing the skills they will need to navigate the complex technological world in their futures.

Through a balance of technology, content, pedagogy and community, students will learn the important skills they'll need to ensure their future is driven by the best aspects of humanity rather than the worst aspects of technology. ▶



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