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## Dubai teachers pitch for artificial intelligence in curriculum

Robotics manager at Gems Dubai American Academy believes teaching students AI at early stage can help



Image used for illustrative purpose. The United Arab Emirates has appointed a minister for artificial intelligence.

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By Sarwat Nasir, Khaleej Times

Flying taxis, driverless cars, robot professors - it seems the next generation may not find artificial intelligence (AI) as "new and exciting" as us. They will be growing up with it, possibly making AI the norm for them, just as we are now accustomed to the internet, mobile applications and Siri.

However, are today's schools preparing the young ones for the hyper tech-savvy future that is approaching?

The Fourth Industrial Revolution has been making headlines worldwide, with various artificial intelligence projects becoming a main focus for many countries. A step ahead, the UAE recently appointed the world's first Minister of Artificial Intelligence.

In the blink of an eye, today's parents may see their children inside flying taxis, in driverless cars or studying in virtual classrooms.

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But are they being taught about the ins and outs of AI, a technology that will possibly be part of their everyday lives?

A few Dubai teachers shared their thoughts on whether AI should be adopted as a core subject within school curriculums, which would allow educators to teach it just like other regular fields, such as Math, Science and History.

The robotics manager at Gems Dubai American Academy, Sreejit Chakrabarty, believes teaching students AI at an early stage can help them in their literacy skills. He thinks it should be considered as a core subject. "We at Gems Dubai American Academy believe that AI education is not just about technical aspects, but the development of cognitive and collaborative processes wherein students can create a new type of literacy from a young age," Chakrabarty said.

Elaborating, he said: "Naturally, this AI literacy brings in and helps students to extend their knowledge of English, maths and coding. For example, by seeing how their programming strategies are reflected in the learning and behaviour of a machine, they can better grasp abstract concepts such as cause and effect. They can also get immediate feedback from the machine and iterate their ideas based upon this. These are powerful opportunities for learning in a cross-disciplinary way."

The school actually has coding as one of their core subjects. Their students are programming robots at a quicker pace and with more depth, thanks to programming languages.

"To mention just a few of our robotics projects - we have high school students creating robotic representations of their poetry readings using multisensory inputs and outputs, middle school learners designing robotic solutions for the threat from genetic diseases, elementary students programming humanoid robots to tell interactive stories with alternative narrative paths, and primary learners doing rhythmic art using superhero robots," Chakrabarty said.

Although one educator, the head of curriculum at the Kindergarten Starters Gauri Meghani believes, AI should not be taught as a stand-alone subject, but integrated with all other subjects simultaneously in order to follow a blended approach for children and machine interaction.

Meghani said that students should remember that machines should not be considered a substitute for personal interaction. "Relying too much on these machines to grade or tutor may lead to educational oversights that hurt learners, more than helping them. It should not become an addiction to make our everyday tasks more efficient," she said. "Our students at Kindergarten Starters have picked up programming skills very quickly as we offer Robotics as a part of our regular curriculum. Our Grades 3, 4 and 5 have learnt to Program LEGO Education Wedo 1.0 and 2.0. They have used all the sensors, motion and display blocks to make their robot do different tasks. like sailing a boat, for example. These activities have instilled a deeper understanding of math and science concepts and evidence based reasoning."

### Amy helps educators customise teaching

It may be a while before the students of today take a flying taxi to work, but they already have the necessary means to interact with an artificial intelligence (AI) application inside their classrooms.

'Amy' is an AI-based private tutor in math. The founder of Amy, Raphael Nolden, has brought the invention from New Zealand to Dubai in the hope that schools here would adapt her into their everyday learning.

Nolden, the CEO of Jaipuna (the firm that invented Amy), told Khaleej Times that Amy also helps teachers be more effective in their classrooms. "She works just like a human tutor, but she is always there to help you even when you are learning at school. She helps students by giving them really specific feedback as they solve problems, and understands why they made mistakes so she can teach them exactly what they need to learn," Nolden said.

"This means she can automatically fill student knowledge gaps before they even notice them, which means students don't get stuck and give up when they do math. She can also make classrooms much more effective by individualising every student's assignments so everyone learns exactly what they need to complete today's class. She allows each student in the class to work at their own pace, so good students move ahead and students struggling with a certain component do not fall behind."

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<b>Saudi SE</b> ▲ 7,438.16 55,644,660 (0.15%) 19 JUL 2020 07:37	<b>Egypt SE</b> 10,441.20 0 (0.00%) 16 JUL 2020 -

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Stocks	% Change	Volume
ISLAMIC ARAB INS	-0.92%	22,270,442
UNION PROP	-0.36%	7,786,368
ARABTEC	0.79%	3,567,811
AMLAQ FINANCE	-0.62%	3,502,631
AMANAT HOLD	-0.78%	3,001,515
EMAAR PROPERTIES	-0.76%	2,380,543
DFM	-1.14%	2,142,150
TABREED	-1.03%	1,914,000
DB ISL INS&REINS	0.00%	1,909,227
DXB ENT	-2.44%	1,511,860
EMAAR DEV	-0.48%	1,419,251

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Amy will also give teachers realtime feedback about each student and the class in general, so teachers know which student exactly needs help. It automatically answers questions most students have, so they don't have to wait for the teacher.

"She also allows teachers to individualise what each student learns. With traditional assignments, everyone in the class gets the same thing, but this means that the assignment is either too easy or too hard for most students. Amy's dynamic assignments allow teachers to simply specify what they want students to know at the end of the class or assignment, and she automatically creates one that teaches them exactly what they need to achieve this."

Amy will also do all of the marking for teachers and take care of reporting requirements, which means that teachers have much more time to inspire their students and create better classes, Nolden noted.

However, Nolden made it clear that AI should not take over the roles of traditional teachers. He believes AI and teachers working in a symbiotic relationship will give best results. Nolden has carried out testing with schools in New Zealand in 2017 and will be rolling out a full version of the product from the start of 2018.

Now, he hopes to find schools that would be interested in doing pilots with Amy.

### ***Re-skill the children as today's jobs won't be available by 2030***

**Bhawna Sajnani, chief digital and innovation officer, The Kindergarten Starters**

As the education industry booms, the quality of instruction is becoming more progressive and challenging. We aim to prepare our children for the 21st century, where they will enter a job market that rewards creativity, flexible thinking, on-the-job learning and ease with technology.

They will be living an expanded civic life where citizens are active in physical communities, online and through social media, getting involved in local politics as well as global initiatives. Education today has changed and progressed from how we learnt in our conventional setups. This is appropriate for the jobs that are available today.

But will the same jobs be available for our children in 2030? Definitely not!

I think the exciting new efforts to make computers think and working with 'machines with minds' will not only personalise learning but also allow them to customise the curriculum based on the child's readiness. As a teacher, personalising instruction is a challenge and I think with AI, we will be able to reach out to all children.

AI's intelligent tutoring system, adaptive group formations, facilitation by examples, intelligent moderations, essay grading software, real problem-solving assessment and game-based learning environments are some of the features that every teacher dreams about when she takes a class. I dream about this because I want to reach out to every child and want each one to succeed.

Business owners today are actively deciding whether their next hire should be a person or a machine. After all, machines can work in the dark and don't require time off for holidays, personal illness, overtime, chronic stress or anxiety. By overhauling our entire education system and providing means for people to re-skill, it is important that we start to act now. In addition to this, we also need to accept that learning doesn't end with formal schooling.

The accelerating pace of technological change means that learning must be a lifelong pursuit, constantly re-skilling to meet an ever-changing world.

Making huge changes to our education system, providing means for people to re-skill, and encouraging lifelong learning can help mitigate the pain of the transition.

It's unlikely that the future will play out like the past. There's no guarantee that more jobs will be created than are destroyed by AI and automation. Even if the future does play out like the past, the jobs being created will require re-skilling and better education.

These services aren't currently provided, so unless we make major changes, we'll have millions of people who can't get jobs and we'll all suffer from it.



Even if we manage to deal with this transition effectively, most jobs will eventually be eliminated by machines. Hence, I feel that teaching them AI from an early age will benefit them in the future.

### ***How important is teaching artificial intelligence?***

**Trisha Sayani, Gems Our Own English High School, Dubai**

Teaching AI is very important because it's our future. Everybody needs to know how it works; its advantages and disadvantages, etc. One main source of artificial intelligence is STEAM and currently the whole world is moving towards it. This is the reason why I think teaching AI is very important.

**Krista Fidelia, Al Diyafah High School**

In this technologically advancing world filled with tech savvy students like us, I believe it is crucial to be taught the basics of AI. As we go further each year, almost every career's fundamental base will be AI. If taught in school, students can step out into the world as confident individuals with the ability to set up a strong career.

**Nada Fathima, New Indian Model School, Dubai**

AI not only reduces human effort, but also helps us to understand things in a better way. Our world, as we know, is running on AI. Facebook suggests our friends, computers trade our stock and now we have cars that park themselves. Soon we will have robots teaching students in school. It helps the teacher focus on the children's needs. Today, teaching AI is as important as teaching Math.

**Nakshatra RP, New Indian Model School, Dubai**

Studying AI opens a world of opportunities. At a basic level, you will understand the system and tools you interact with on a daily basis. It can prepare you for a job as a software engineer, creating AI software programmes or even a hardware engineer developing electronic parking assistants or home assistant robots.

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