Coding enrichment classes for all upper primary school students from next year

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The Code for Fun enrichment classes for all Primary 4 to 6 students from next year will be a 10-hour programme conducted by the Ministry of Education and the Infocomm Media Development Authority.

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SINGAPORE — All upper primary students (Primary 4 to 6) will attend compulsory coding enrichment classes from next year onwards, Communications and Information Minister S Iswaran announced on Wednesday (July 10).

Called Code for Fun, the 10-hour programme will be conducted by the Ministry of Education (MOE) and the Infocomm Media Development Authority (IMDA).

The programme will start at some schools later this year — with Primary 6 students going for lessons after the Primary School Leaving Examinations (PSLE) — before it is rolled out to all primary schools next year.

The programme builds on previous efforts by MOE and IMDA to expose students to basic coding.

Code for Fun was piloted in 2014 as an optional enrichment programme for primary and secondary school students to learn computational thinking through basic coding.

Since then, a total of 93,000 students have benefited from the classes.

IMDA said that the Code for Fun programme will teach students computational thinking, coding concepts and problem-based learning, among others.

Students will also be introduced to emerging technologies such as artificial intelligence, said IMDA.

At the secondary school level, the programme will continue to be optional, to complement existing computing education efforts, which include computing-related Applied Learning Programmes and the O-Level (elective) and A-Level computing subjects.

The announcement was among several made by Mr Iswaran at the Ministry of Communications and Information's workplan seminar on Wednesday, where he outlined several measures his ministry was taking to help Singaporeans in the digital transformation journey.

PARENTS UPBEAT ABOUT MOVE ON CODING CLASSES

Some parents TODAY spoke to said they looked forward to the roll out of the Code for Fun programme.

One parent, who wanted to be known only as Ms Gan, said: "My son actually expressed interest in coding and I've been looking around for holiday courses to sign him up for. It's timely that now I will not need to send him for classes outside as there will be enrichment classes in school."

Ms Gan, who works in the finance industry, added that coding courses may not be cheap, and so the programme could benefit children from lower income families.

The cost of a week-long coding programme in private centres could be in the thousands of dollars, according to TODAY's report on the surge in popularity of such classes here.

Ms Gan said her son, who is in Primary 5, enjoys computer work and online assignments. "The medium itself is already attractive to him so it will not be a push or challenge to get him interested in the programme."

However, she wondered if such efforts to expose students to coding will continue through to secondary or tertiary levels.

Ms S Lim, whose child will be in Primary 6 next year, said that she is not concerned that the course will affect revision for the PSLE. The 43-year-old said: "It could also help my child spark a new interest in coding and, who knows, a career in the industry."

Education experts TODAY spoke to lauded the move, as coding equips students with problem-solving skills, much more than just learning how to type "lines of code".

Associate Professor Hady Lauw from the School of Information Systems, Singapore Management University said through coding, students could pick up problem-solving skills, learning how to think and come up with "logical, thorough" solutions.

He said: "A lot of coding concepts are based on logic. This trains the students to be more systematic and analytical in the way that they're approaching problems.

"Coding is essentially a way to express the computational thinking process, where a student 'instructs' a computer to solve some tasks using concepts fundamental to computer science. The wrong instruction will get them the wrong output. The immediacy in seeing the wrong output serves as a corrective feedback loop (which is) essential to self-learning," he said.

Prof Lauw, who is also director of the computer science programme at the university, said: "One of the biggest advantages in learning coding is that students can now leverage the power of computing to solve problems in other areas."

For example, this could prove useful when students work on research and reports, where they need to analyse large amounts of data.

Traditionally, they would have to sieve out key information from numerous sources — a laborious process that can be hastened by software.

"It reduces the amount of manual work students do and is a big game-changer in terms of how students learn and how they approach learning," he said.

Exposing students from Primary 4 — when they are usually aged 10 and above — is an appropriate time as students would need some "foundational knowledge" in various subjects such as English and mathematics before learning coding, said Prof Lauw.

Associate Professor Ben Leong of the National University of Singapore's School of Computing said coding is likely to develop student's creativity and problem-solving skills.

Much of learning how to code, he said, is the process of learning how to express the solution to a problem.

"It is impossible to 'rote learn' coding, it will force students to 'learn how to learn'," said Prof Leong.

This would tackle one of the challenges in the education system: The tendency for students to succumb to rote learning because it is a shortcut to doing well in exams, he said.

While Prof Leong said that exposing students to coding is a good thing, he felt that it is not necessary to start learning coding at a young age to excel at it.

"While the money is in all the tech jobs today, parents don't need to be kiasu (fear of losing out). I recommend that parents provide their kids with an environment to learn what they like," he added.

OTHER DIGITAL TRANSFORMATION EFFORTS

* EXPLORING CAREER OPTIONS IN CYBERSECURITY

IMDA also intends to provide some 10,000 young people with opportunities to explore cybersecurity as a career, as well as gain exposure to relevant technical knowledge and soft skills. This will be done through the Singapore Cyber Youth Programme.

* BOOSTING CYBERSECURITY

IMDA is establishing a Telecoms Cybersecurity Specialist team in the next few months to strengthen trust and resilience in Singapore's telecoms ecosystem. The team will set-up testbeds to perform cybersecurity vulnerability assessments, conduct cyber exercises and test new technologies. As a start, the team will focus on 5G — the next generation of ultra-high speed digital delivery.

* EFFORTS TO HELP THE ELDERLY

To help seniors with their digital needs and queries, IMDA will supplement existing Digital Clinics with an additional 100 Merdeka Generation Digital Clinics — targeting Merdeka Generation residents — islandwide over a year, starting in September 2019, to benefit 10,000 seniors.

These clinics will focus on providing seniors with foundational digital skills and educate them on how to protect themselves from online risks.