Nanyang Technological University's second learning hub boasts 'smart' classrooms

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SINGAPORE (The Straits Times/AnH) – Newly opened The Arc has 56 such rooms to encourage more discussions and better learning.

Classrooms with university students sitting in rows insideinos lecture halls, listening passively to lectures dial out information, are becoming a less common sight.

For some universities, a drive to improve how students learn – by encouraging more interaction and discussions – has been gaining momentum.

The Nanyang Technological University (NTU) now has more than 200 “smart” classrooms on campus for such learning. Each is equipped with multiple LED screens, flexible clustered seats and wireless communication tools.

Since 2015, NTU has done away with traditional classroom layouts so that students can learn more proactively and in groups, to keep up with the changing demands of workplaces.

On Wednesday, NTU launched its latest learning hub, The Arc, a six-storey building with 56 smart classrooms.

The building, which cost S$41.5 million, is designed by local firm DCA Architects. It has 13 project discussion rooms, a room for quiet reading and a 250-seater lecture theatre. Its two lower levels have rooms that serve as workshops for engineering students.

The facility, which has a gross floor area of 18,133 sqm, also houses most of NTU’s Singapore Centre for 3D Printing facilities, which will conduct research in smart technologies such as printable electronics, lightweight aircraft components and 3D-printed medical implants.

NTU president Subra Suresh said the Arc is designed to create avenues for students to discuss ideas and interact across disciplines.

Facilities and infrastructure are important as “the way a classroom is designed influences the style of teaching, the delivery of knowledge and the effectiveness of the whole learning experience”, he added.

With the new learning arrangements, termed the “flipped-classrooms” model, NTU students access materials online before class.

Class time is used for deeper learning activities such as tackling problems in teams of five or six and engaging in more discussions with professors as guides.

Third-year mechanical engineering student Edward Lam said that with the redesigned courses, students can take more ownership of their learning.

“We can learn at our own pace...we can fast-forward the recorded lectures or backtrack, compared with physical lecturers – once (a physical lecture) is gone, it’s gone,” said the 23-year-old.

“Lessons are also more engaging and there’s more interaction with professors.”

Other universities such as the National University of Singapore are also moving towards more interactive and in-depth learning in classes. Singapore Management University also employs seminar-style teaching in smaller classes instead of huge lectures.

The Arc is NTU’s second learning hub, after its Iris. The Iris, was launched in 2013. The Iris, which has been nicknamed the “film bun basket building”, has 55 smart classrooms with similar features.

At the event, vice-president Professor Firdaus thus gave an update on NTU’s (target to redesign) at least 50 per cent of its undergraduate courses to use the flipped-classroom method by 2020. To date, 20 per cent or 114 courses have been converted, with another 175 courses in the works.

“The Arc is an integral part of our Smart Campus approach – adopting digital technologies to support better learning and discovery, and to improve the sustainability of resources,” he said.

The building incorporates eco-friendly features such as energy-saving LED lighting, motion sensors and solar-powered systems.

Instead of walls, it comes with an aluminium sunscreen that reduces solar glare and heat, and keeps rain off while allowing ventilation throughout the day.

Its air-conditioning system saves energy by using passive cooling coils to chill the air without the use of fans. These cool coils can be as it sinks downwards, which moves warm air upwards.

Last year, The Arc was awarded the Green Mark Platinum, the highest award for sustainable building design in Singapore from the Building and Construction Authority.