

Movement for the Intellectually Disabled of Singapore (Minds) Fernvale Gardens School pupil Leong Shu Yi, 12, trying out the i-Tile, which makes learning more engaging for children with special needs. It incorporates movement and play into learning, and helps train social skills. ST PHOTO: DESMOND FOO



CONFIDENCE BOOSTER

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MADAM MALKEET KAUR, a teacher at the Minds Fernvale Gardens School, a school for students with intellectual disabilities and autism spectrum disorder.

Kids of different abilities learn together – using new tech tool

i-Tile system developed by NTU team and put on trial at Minds school, with positive results

Wee Rae

A team of researchers from Nanyang Technological University (NTU) have developed a new educational tool, for teachers to tailor lessons to meet the needs of students of different learning abilities within the same classroom.

Led by NTU Associate Professor Goh Wooi Boon, work on the system, i-Tile, began in 2015.

Since the start of last year, 30 students aged seven to 15 at the Move-

ment for the Intellectually Disabled of Singapore (Minds) Fernvale Gardens School, a school for students with intellectual disabilities and autism spectrum disorder, have been trying it in their classes.

Prof Goh said he drew inspiration from case studies on schools around the world, such as in the United States, where movement was incorporated into lessons. Engaged, the students learn better.

The current trial for English lessons is pitched at students with special needs or pre-schoolers.

The system consists of two tablet computers, as well as the i-Tile, which is a custom-designed card reader, and cards with radio-frequency identification tags, detectable by the i-Tile. Both the i-Tile and cards were built from scratch.

For example, the teacher may show an image of an object, say, an apple, on a projector. The teacher gives instructions, such as to spell the name of the object using alphabet cards or match picture cards to the object on the screen, depending on the students' ability level. The students, in teams, then select the corresponding cards and tap them against the i-Tile to earn points.

Students of a lower learning ability may start off by matching images to the words, while those of a higher

learning ability spell the words. They progress to the next level at their own pace.

"What we're trying to do here is to incorporate the movement and the play element into the learning activity," said Prof Goh, who wanted to create an interactive system using technology.

Another benefit: training social skills. With the system, students are taught to work collaboratively in teams and to wait for their turn.

Since the trial began, teachers at the school said they have seen an increase in motivation and confidence levels of their students.

Madam Malkeet Kaur, a teacher at the school, said: "When we used this programme, the children who were (initially) very shy also came up to

play. They became more participative, and grew out of their shells."

Another teacher, Ms Clare Kong, noted that one of her students, 13-year-old Rahul Sharma, who suffers from Down syndrome, was able to match pictures with words within a year of using the system.

Previously, Rahul was only able to match pictures together. To achieve something of that level could sometimes take students almost two to three years, she said.

Temasek Foundation Innovates funded the project. While Temasek Foundation Innovates chairman Leo Tan declined to reveal the amount, he said the maximum amount of funding the foundation gives for projects runs up to about \$750,000.

The trial concludes in June. The school will then collate its findings and share them with the other three Minds schools, to allow them to decide whether to adopt the system as well.

Minds Fernvale Gardens School already has plans to roll it out to all of its 180 students across its English, mathematics and social skills classes.

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