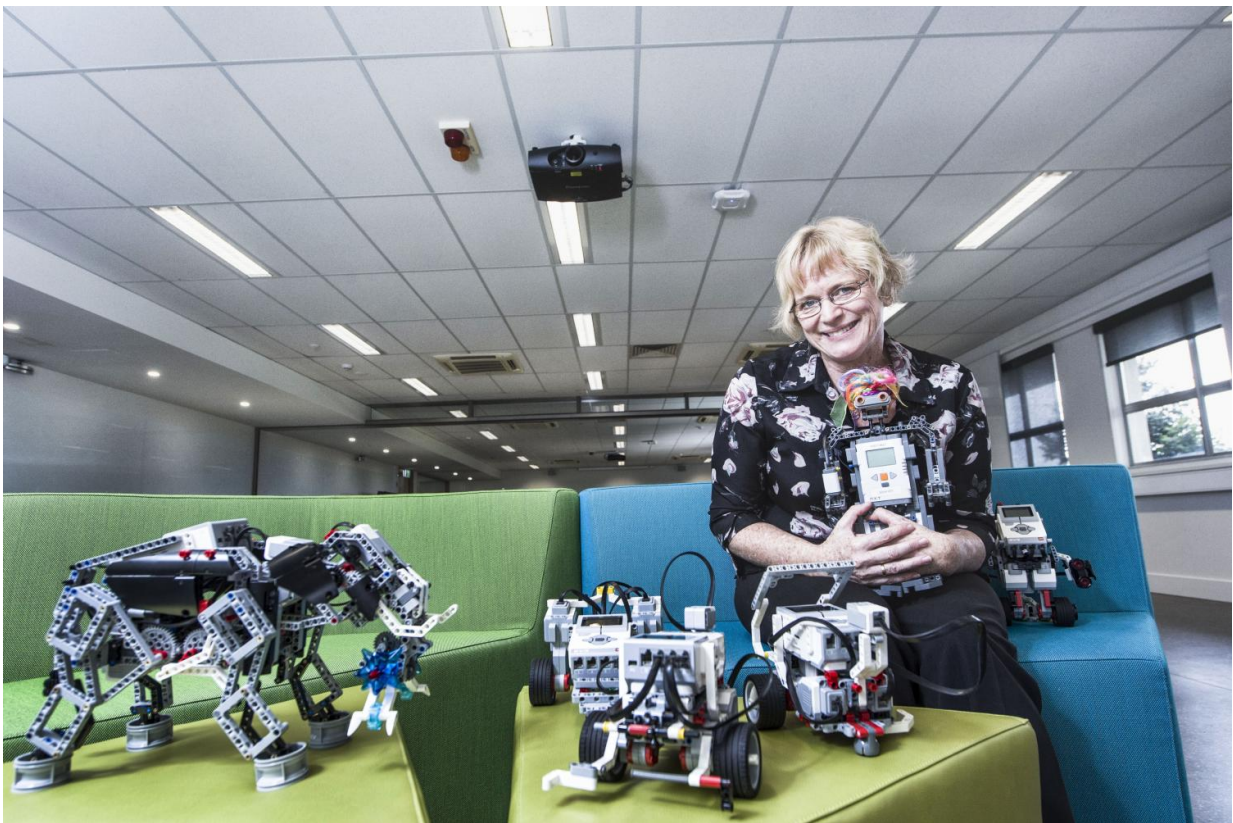


Child's play: Australia's newest roboticists see eye-to-eye with R2-D2

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Dr. Christina Chalmers suggests children from age four can become robot programmers. Credit: Queensland University of Technology

Children from age four can become robot programmers rather than waiting for the higher years in schooling, says a QUT education

researcher.

Dr Christina Chalmers from QUT's Faculty of Education, is a leading Australian authority on the teaching and application of robotics in classrooms.

Dr Chalmers said robotic coding was a growth area in industries including medicine, manufacturing and agriculture, which increased demands on educators to keep ahead to promote student learning.

"It is really important that children have these skills early in life but we need to make it fun for them and think about how they can be creative," she said.

"Preliminary findings from a current study have shown even pre-school students have gone beyond simply playing games with a NAO robot.

"They've drawn pictures of their 'robot' classmate and been able to explain how the robot received its coded messages wirelessly.

"This involved quite complex conceptual thinking by four-year-olds as to how the robot's behaviour was being controlled."

In 2016, coding and robotics was implemented into Queensland primary schools.

"Coding is basically telling a computer what you want it to do through step-by-step commands," she said.

"Research tells us that if kids don't form positive attitudes towards science, maths and technology early in life they can find it difficult to engage later on."



Dr Chalmers said robotics provided an engaging way for both students and teachers to work together.

"It arouses students' curiosity in a way that fosters problem-solving," she said.

"They are allowed and even at times encouraged to fail in order to work out what went wrong and learn from their failures and share and develop their ideas with other students.

"Robotics activities are very effective because they are hands-on and students get immediate feedback on whether their [robot](#) and program works or not."

Dr Chalmers, who is a lecturer in technologies and mathematics education with QUT's School of Curriculum, is at the forefront of projects to integrate robotics into classrooms.

She began the [Robotics@QUT](#) project which includes 50 Queensland schools in low socio-economic areas.

She is also in partnership with the Association of Independent Schools of South Australia and three other Australian universities into how humanoid robots can be integrated into the Australian curriculum.

Dr Chalmers has also conducted a project in conjunction with Brisbane Catholic Education and AutismCRC to develop robotic social clubs.

She said robots not only appealed to young children but were popular and motivating for university students, with robotics a part of the teaching program in the primary education degree at QUT.

"It provides a way of representing and understanding STEM (science, technology, engineering and mathematics) concepts in ways that could not be done with pen and paper," she said.

Dr Chalmers presented her research titled "Partnering with Robotics" as a keynote speaker at the [Australian Council for Educational Research \(ACER\) Excellence in Professional Practice Conference](#) in Melbourne.

Provided by Queensland University of Technology

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