

Companion robots could help our rural schools

February 15 2018, by Anna Kellett

Companion robots could be used in rural schools to help motivate students to study science and technology, and to provide comfort, according to University of Auckland research.

The study, *How Could Companion Robots Be Useful in Rural Schools*, has recently been published in the *International Journal of Social Robotics*.

Lead author, Associate Professor Elizabeth Broadbent of the University's Faculty of Medical and Health Sciences, says, "To date, schools have mainly used robotic kits to teach children how to build and program robots. We were interested in how students and teachers would respond to a different kind of [robot](#), a companion robot. Would it be seen as useful? Would it make students more interested in learning about science and maths?"

In all, 207 students and 22 teachers from pre-school to high-school, participated in 30-minute sessions with two popular companion robots, Paro and iRubiQ. The schools were in the Central Plateau and Buller regions. Rural schools were chosen because they typically have fewer resources than city schools.

Paro is a fluffy pet-type robot that is built to resemble a baby harp seal. It can respond to touch, light, and sound with movement and seal noises. Dr. Broadbent says to their knowledge, there is no previous research on the use of Paro in schools.

iRobiQ looks more like a traditional robot and is used in [early childhood education](#) in Korea to teach English, entertain by singing and dancing, tell nursery rhymes, and deliver other educational content. It has speech and face recognition and can communicate with basic facial expressions and speech.

The sessions started with a brief demonstration of each robot by the research assistant and then participants could use each robot for up to 10 minutes. After interacting with each robot, students and teachers were asked questions about iRobiQ and Paro.

Students generally had a favourable impression of Paro and iRobiQ. Overall 84 percent of students said they would like to have Paro at school and 80 percent said they would like to have iRobiQ at school. Overall, 83 percent of students said Paro made them more interested in science and 77 percent of students said that iRobiQ did.

Girls and boys had similar answers to most questions, but on the four questions where there was a gender difference, girls were more positive than boys. Significantly more girls (91 percent) said they would like to have Paro at their school than boys (78 percent). More girls (90 percent) wanted iRobiQ at their schools compared to 72 percent of boys.

Dr. Broadbent says that we need to motivate more students to go into science and technology careers, especially girls, so these results are promising.

Teachers also had a favourable impression of Paro and iRobiQ, with 68 percent of teachers saying they would like to have Paro at school, 22 percent were not sure, and 9 percent did not know. Responses were similar for iRobiQ with 60 percent of teachers saying they would like to have iRobiQ at school, 20 percent were unsure and would like to see the

robot improved, and 20 percent did not want iRobiQ at school.

Students and teachers were asked what the robots could be useful for, and many suggested that Paro in particular could provide comfort, like a pet.

"Both teachers and children saw Paro as a pet and as useful for providing comfort. Given the prevalence of anxiety and depression in school-age children, robots may be a useful tool in [school](#)-based approaches to promote mental health. However, further research is needed to test this."

More information: Elizabeth Broadbent et al. How Could Companion Robots Be Useful in Rural Schools?, *International Journal of Social Robotics* (2018). [DOI: 10.1007/s12369-017-0460-5](https://doi.org/10.1007/s12369-017-0460-5)

Provided by University of Auckland

Citation: Companion robots could help our rural schools (2018, February 15) retrieved 25 April 2024 from <https://phys.org/news/2018-02-companion-robots-rural-schools.html>

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