

Telepresence Robots:

Building Better Practice for Connecting Students with Serious Illness or Injury to their Classrooms

Around Australia, an estimated 60,000 students with serious illness or injury remain at home or in hospital, missing school. Some miss days and weeks, others miss months and even years. There can be profoundly harmful consequences.¹

Academic achievement may be hindered, relationships with peers and teachers disrupted, and motivation diminished. Isolation from the school community can put students at risk of disengaging from school and learning, with long-term consequences which persist into adulthood.²⁻⁶

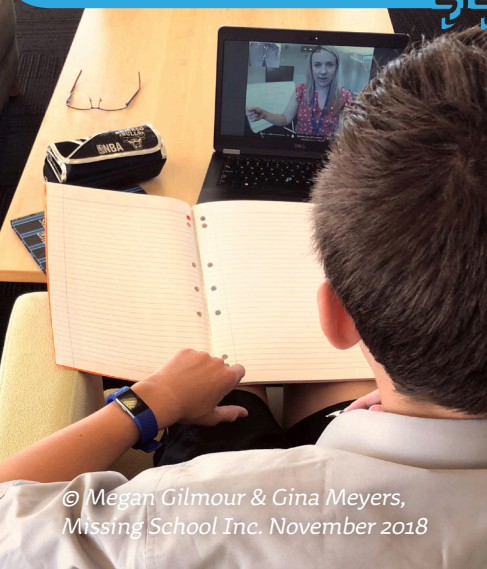
With the advent of innovative technologies for communicating, teaching and learning, we now have access to resources and opportunities which were unimaginable in previous generations. Students who cannot physically attend can now “be at school” from wherever they are.

What happens when students with serious illness stay connected?

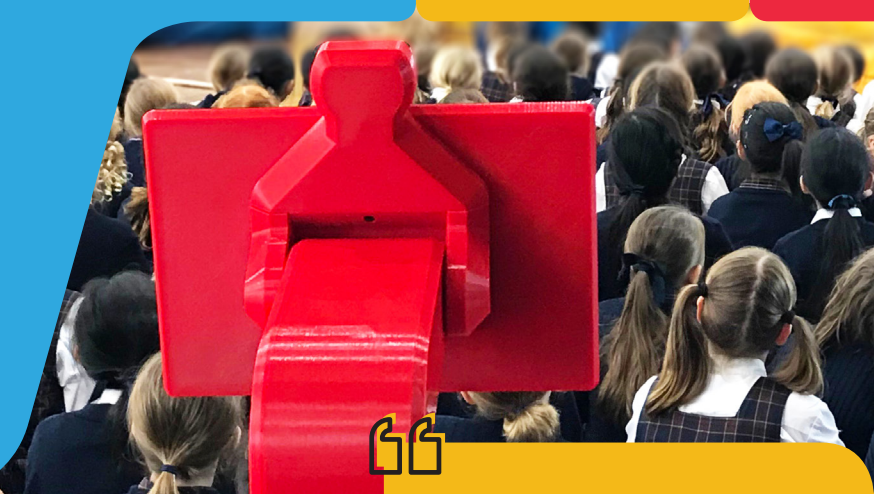
Maintaining connection keeps students with illness up-to-date socially and academically, helps to normalise a critical period in their life, and gives them a chance to be “just kids” rather than patients. There are positive outcomes for students with illness, support for their siblings and families, and a reduction in the anxiety often experienced by teachers, peers and the broader school communities in this situation.^{2,4,7}

It’s basically like I am there, interacting. To be involved in the classroom and have that mobility to move around ... and not having to get people to move me, it gives a sense of freedom.

**Tom,
Student**



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[The robot is] a constant through a very abnormal time ... the social connection can’t really be measured, it is fantastic!

**Katie Hammond,
Parent**



When you’re lying in a hospital bed, to be able to engage with your peers, to be able to join in with the learning, is what the student wants to be able to do.

**Mercedes Wilkinson,
Principal – The Hospital
School at Westmead**

Why telepresence robots?

Telepresence robots live in the regular classrooms of students, and are operated and moved in real-time by the student on their device from the remote location (e.g., home or hospital). The student can see and hear their teachers, be seen and heard, receive the same instruction as their peers, navigate the robot around/between classrooms, socialise with friends, and participate in as much of the school day as possible with their classmates. This means students with significant illness or injury can connect with and participate in their regular school, even while physically absent.

Academic continuity and return-to-school transition

When telepresence robots are deployed to meet a student’s social and emotional needs, the benefits to their emotional wellbeing usually flow on to support their academic needs as well.

Trials of the telepresence robots in Australia reported that parents and teachers alike were surprised by how much energy the students had, and how much schoolwork they undertook, when their engagement with the classroom was mediated through the robot.⁸ Furthermore, in two-way digital connection, students reported working harder and feeling less anxious and less depressed because they were able to maintain conversation and engagement with their peers.⁹

When the students were well enough to return to school, they and their classmates were already accustomed to seeing each other regularly and interacting over classroom activities, and so the transition back to school was easily managed, with no particular adjustments needed to classroom social routines.¹⁰

Planning considerations

All users should understand what the robot is and is not capable of doing (for example, it carries no recording capability), and should agree in writing to usage protocols which are consistent with the school's governing privacy policies.

Pre-training for school staff, the student, and families is crucial. Trials recommend four days to: establish a stable connection between the user and school; familiarise users with the technology¹¹ and practise navigating the robot through an empty classroom before in-class use begins.¹²



Adjustments to classroom routines and lesson plans may include...

- ▶ Nominating a "chaperone" or "buddy" to assist robot manoeuvring, and making sure the robot is charged and ready.
- ▶ Providing frequent opportunities for students to interact "one-on-one" with the robot (encourages robot presence as "normal" in the classroom).
- ▶ Considering where to place the robot in the classroom so the remote student has a good view of the teacher and instructional materials, without blocking other students' view.
- ▶ Considering how to manage activities which require physical manipulation of resources – e.g. in a science laboratory – so the remote student can still participate as fully as possible.
- ▶ Ensuring noise levels in the classroom are managed so conversations between the remote student and classmates can be handled by the robot's microphone and audio system.



Education and social connection between students with serious illness and their schools can continue to happen wherever their school day takes place – at school, in hospital or at home. Their education matters today. Because their future is now

Megan Gilmour,
Creator of the National Telepresence Robot Initiative, Co-founder and CEO of Missing School Inc.

Telepresence robots in the Australian education context

The feasibility of maintaining connection between schools and students who are absent from their classrooms because of serious illness has been demonstrated across Australia through the telepresence robot pilot launched by MissingSchool in 2017 on funding from the St. George Foundation. While robots have been used around the world in individual schools, there are very few jurisdictions where the technology has been implemented at a systems level as a response to the needs of students with serious illness.

Schools, hospital schools, and education systems around Australia are working with MissingSchool's national telepresence robot initiative. Together we are harnessing the power of telepresence robots to connect students with serious illness with their learning, teachers, and peers when they miss school.

This is an exciting opportunity for Australian schools and educators to lead the way in building new technology and pedagogical capabilities, and will rely heavily on critical feedback from all schools and students involved. It builds on government commitments to broadening support for disability education, equity and inclusion, digital transformation and STEM in schools. It is expected that the results of the pilot will be shared throughout Australia, and internationally, in order to benefit students with illness everywhere who are missing school.⁸

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MISSING SCHOOL
KEEPING SERIOUSLY SICK KIDS CONNECTED