

Teaching robot helps children to use wheelchair

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A robotic wheelchair is being developed that will help children learn to 'drive'. Researchers writing in BioMed Central's open access *Journal of NeuroEngineering and Rehabilitation* describe the testing of ROLY -Robot-assisted Learning for Young drivers - in a group of children without disabilities and one child with cerebral palsy.

Laura Marchal-Crespo, worked with a team of researchers at the University of California at Irvine, USA, to carry out the study. She said, "The conventional approach for powered wheelchair driver's training is expensive and labor-intensive, typically requiring the hand-over-hand assistance of a skilled therapist. To lower the cost and improve accessibility to training, we have developed a robotic powered wheelchair system on which young [children](#) with a disability can safely develop driving skills at their own pace with minimum assistance".

The researcher's technique involves the trainee learning to chase a small robot along a line painted on the floor. The force feedback joystick used to steer the [wheelchair](#) can also give physical assistance to the driver, at a level appropriate to their ongoing performance. When caught, the robot performs a dance and the chair plays a little tune. The joystick haptic assistance was found to enhance learning in both the non-disabled children trained with haptic guidance and in the child with a severe [motor impairment](#). Speaking about the results, Marchal-Crespo said, "Ultimately, we envision creating a training experience that compares favorably with the fun children experience with the best amusement park rides, but that facilitates the development of driving skill".

More information: "A robotic wheelchair trainer: design overview and a feasibility study," Laura Marchal-Crespo, Jan Furumasu and David J Reinkensmeyer, *Journal of NeuroEngineering and Rehabilitation*

Provided by BioMed Central

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