

# The use of robots in Autism Therapy

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How can we use robots to help therapy of children with ASD? Several researchers have devoted their studies of the use of robots in the development of cognitive and behavioral skills in children with ASD, however, these studies are still at an early stage of research. Most children with ASD have difficulties in developing social behavior and they appear to live in their own world. The project Robótica-Autismo has the goal to improve the social life of children with autism with a main focus on promoting their social interaction and communication. The basic concerns of the use of these technologies with this target group are gaining the initial necessary trust of the therapists and parents, the adaptation of the activities to each child and the possible promotion of isolation.

Nowadays, parents are bombarded with solutions for their children with ASD: traditional therapies, dangerous drugs, intensive diets or strict routines. Introducing a new element to the existing therapies in Portuguese schools can be seen as opportunism. To counteract this effect, the research team should study and investigate all the possible advantages and disadvantages of using this type of technology.

The Project Robótica-Autismo has been developing robotic tools as a method to improve the social life of children with autism, by promoting their interaction and communication. The main problem is

that children with autism are quite different between them, even when they get the same classification in CARS (Childhood Autism Rating Scale). So the activities performed with the children must be adapted to a specific individual. This adaptation can complicate the use of the robot in institutes or schools. A possible solution can be creating a wide range of activities and to create a scale of difficulty, so that the child could perform easier or more difficult stages.

Besides the necessary trust of the parents and therapists and the adaptation of the activities to each child, another problem is isolation. All of the traditional existing therapies focus on the attraction for children's attention encouraging their cooperation. Nevertheless, a robotic activity can promote isolation because the child could be playing alone. In this project, the robot will behave as a mediator/promoter of interactions between the child and a third person, that could be her/his parent, therapist or peer, that being a so called, triadic interaction.

In the end, we should have an autonomous, and user-friendly robot, which can be used to facilitate and promote contact with children with ASD. A careful study of the potential of this platform, a wide range of activities to adapt to many children and finally the use of robotics as a mediator appear to be the best ways to promote interaction between children with autism and other people.

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