

## Abstract

Children with autism spectrum disorder (ASD) demonstrate limitations in social communication and social interaction across home, school and community contexts. Restrictions on participation in activities impinges further on the social development of individuals with ASD. Teaching and intervention programs using humanoid robots for children with ASD has rapidly been developed with an aim to improve their social functioning. Increasing resources have been invested in the development of artificial intelligence engineering to aid in the programming and design of humanoid robots to enhance the learning of children with ASD, and local special schools have been subsidized to enable the purchase of humanoid robots for use with students with ASD. However, there is no standardized policy, guidelines or protocols to guide practice. The evidence-base of robotic intervention programs for children with ASD is limited. There is, as yet, no evidence to inform therapists, teachers and service providers on a best practice program design to ensure program effectiveness. This study will develop and test a Robotic Intervention Framework for Children with ASD in the real context. It will be built from a synthesis of literature review, verification with the evidence collected in the real context; and testing of effectiveness using scientific methods. The first part of this study will focus on the identification and initial testing of core elements of effective robotic intervention programs to form a practice framework. Part II will use a randomized control trial to test the efficacy of the robotic intervention programs that incorporates all elements of the framework. Part III will use a qualitative approach to examine the outcomes of the program with reference to the elements of the practice framework. With a framework that is built upon evidence and tested sufficiently, practice guidelines and an intervention protocol will be delineated to ensure the success of robotic intervention programs.