مجلة الطفولة والتربية – العدد السابع والأربعون – الجزء الأول – السنة الثالثة عشرة – يوليو ٢٠٢١

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# Special needs and Social Intelligence in Interactive Hapy- Robotics

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# Special needs and Social Intelligence in Interactive Hapy- Robotics

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## Abstract:

The new Autism Hapy- Robot could be useful in helping autistic children and ADHD develop their social skills, although the short duration of the cars test could have an effect.

The development and testing of a robot on children with autism and the idea is that a sick child can, by interacting with the robot, improve his emotional, social and intellectual skills, and the robot, after its development, can "help" the therapist by expressing various emotions, so that he can develop various skills And suggesting educational games targeting the sick child and identifying him after determining a program equivalent to his condition, We are working to integrate the expertise of the field of behavioral therapy and robotics science in devising new methods to make the robot more useful in therapy sessions.

Keywords:

Autism, Special need, Robot, Hapy- Robot, ASD,ADHD, Social Intelligence

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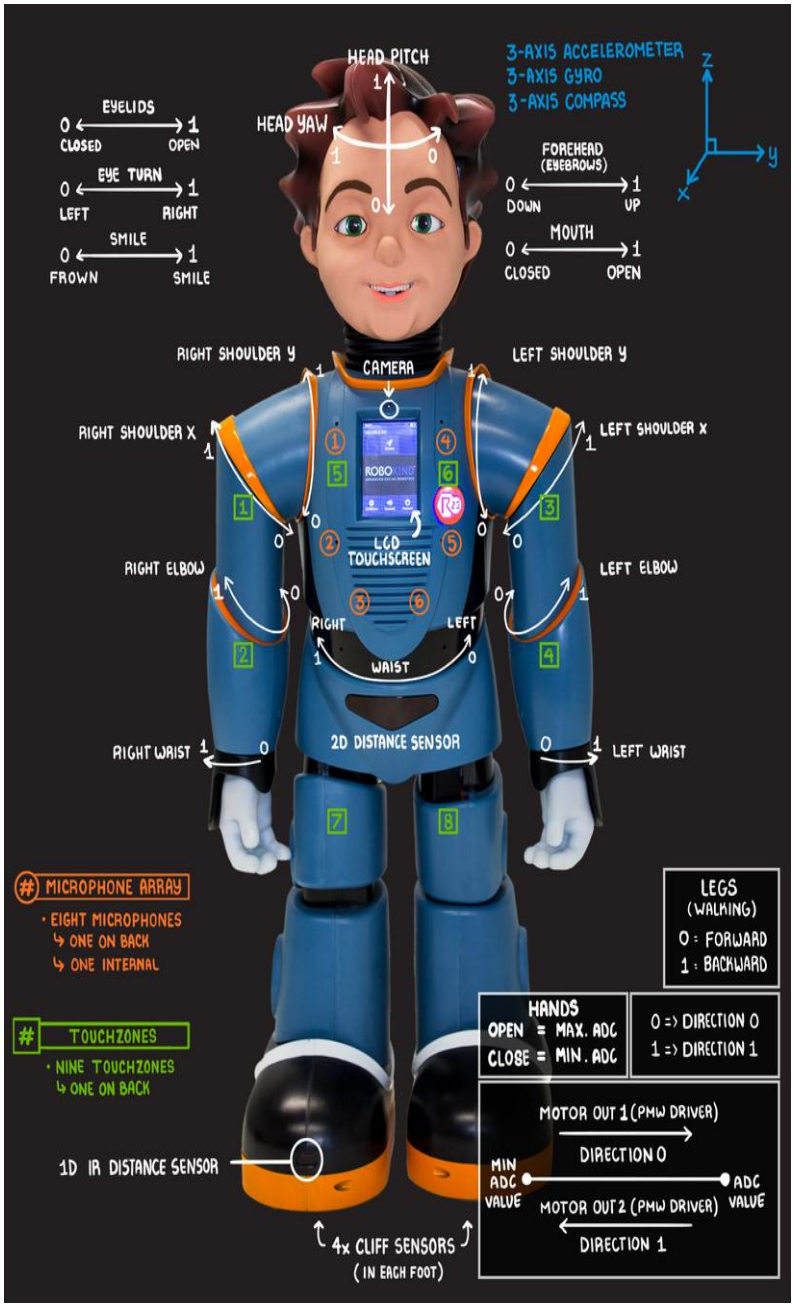
## Graphic Abstract:



## Introduction

The Hapy- Robot is designed to be interesting and approachable for learners with Autism spectrum disorder (ASD). He can walk, talk and even model human facial expressions. Hapy- Robot never gets frustrated or tired. He consistently delivers lessons in a way that learners with SN respond to. This recurring positive experience creates an environment in which learners can learn and thrive. Hapy- Robot Autism helps learners improve their social and behavioral skills and gain the confidence they need to succeed academically and socially.(1,2,

Using the Hapy- Robot for Autism program, individuals specially with ASD and generally learn to:

- Tune in on emotions
- Express empathy
- Act more appropriately in social situations
- Self- motivate
- Generalize in the population

The Hapy- Robots for Autism lessons are designed to teach social behaviors and emotional identification to learners ages 5- 17 who meet the Prerequisite Skills. To determine if the curriculum is appropriate for your child,

Hapy- Robot delivers lessons verbally. As he speaks, symbols are displayed on his chest screen that will help your learner better understand what he is saying. Throughout the lessons, Hapy- Robot will ask your learner to watch four to five second video clips on the student tablet. The videos show learners displaying the skills or behaviors both correctly and incorrectly that Hapy- Robot is teaching. Your learner will be asked “yes” or “no” questions to determine if the learners are doing the behaviors right or wrong.

It is recommended that your learner work with Hapy- Robots, along with an educator or therapist, for 30 to 60 minutes at least three times a week.

“Using Technology for Better Results in Special need SN and ASD Classrooms,

”details how technology can be an effective and transformative resource for SN instruction, even as it significantly cuts the cost per student.

Reduce harmful behavior and promote healthy interactions with other humans

## Material and Method

The idea is that the Special need and autism child can, by interacting with the robot, improve his social and mental emotional skills. After its development, the robot can “assist” the treating specialist by expressing various emotions, so that the sick child can identify it.

SEROTA: A Brief Case Study ERA provides a basis for writing a design specification. However, that’s not enough: UDL demands a firm focus on special needs issues. Valiant’s research showed designing special needs robots enriches the potential of a mainstream robot. In the SEROTA development, Valiant took the precaution of forming alliances to continue specific research to guide design decisions these included:

1. CNFEI: Based in Paris they train special needs teachers in France. They used Roamer to overcome student’s aggressive behavior. They didn’t need to adapt Roamer they set the student a task which engaged and calmed them down. (Sarralié 1998).
2. Anthrotronix: Based in Maryland, they built their CosmoBot robot on top of Roamer. They worked with the Mayo Clinic in Minnesota. They built various gadgets for control- ling Roamer and providing students with feedback. Their detailed work supports the claims made about educational robot and autism, cerebral palsy and other conditions where access is a problem (Boser et al. 2013).
3. Inkha developed a Kismet- like robot. Its facial expressions respond to people. This technology can integrate into Turtle robots. A lot of work needs doing to develop relevant challenges.
4. Prodel: In compliance with the UDL Principle 2 (Provide multiple options for expression and control) this Spanish company created a Braille keypad for the latest Roamer.

## Designing a Special Education Robot:

The Principles of Educational Robotic Application While SEROTA aimed to create a robot for special needs education, Valiant quickly under- stood they were unintentionally updating their Classic Roamer robot with a specific con- cern to address SEN. In part this inspired Catlin and Blamires to write ERA Principles which states ten key facets about educational robots. The Principles:

**1. Explain:**

a. How robots help students learn.

b. The benefits of educational robots to teachers.

**2. Offer a checklist for those who want to:**

a. Design educational robots.

b. Develop student work schemes using educational robots.

3. Helps justify the investment by schools in robotic technology.

4. Suggests underlying cognitive and developmental processes.

5. Predict what we might expect robots in the future to achieve- that is robots that measure up to Paper's Paradigm.

6. Serves as a schema for the general evaluation of work with educational robots.

## RESULTS:

Without the right tools and early intervention, the communication and social- emotional development of students with ASD can be stunted, leading to detachment, aggressive behavior, and frustration. Learners on the autism spectrum deserve every opportunity that mainstream students have to express themselves and thrive. Effective technology with comprehensive curriculum is the solution!

By using assistive and supplementary tech in SN, ASD and ADHD classrooms, teachers and paras can help students with ASD:

- Boost their confidence
- Develop a capacity for social- emotional growth
- Become competent in their curriculum

## Discussion:

There are many potential advantages to using interactive robots in clinical settings with individuals with SN, ASD and ADHD. These advantages include the intrinsic appeal of technology to individuals on the spectrum, robots' ability to produce simple and isolated social behaviors repetitively, and the fact that they can be readily be programmed and adapted so that each child gets individualized treatment. Despite these promising possibilities, research in this area is in its infancy, and further research is needed to determine the incremental validity of this approach. It will be important to publish some of this research in Special need journals in order to have the work evaluated with experts who have clinical expertise in this field.

## Conclusion:

We plan to use this research in the development of special needs robots. The combination of Paper's vision with ERA, UDL and the SEN research will help designers build better robots and applications. In turn, these will help teachers to teach better and all SN student to achieve more. Paper's Paradigm links together education and technology within a pedagogic framework that is now well supported by a view of difficulty and disability. Both these give agency to the Special needs children and teachers who have the potential enhanced skills and knowledge to exploit the power offered by SN educational and social intelligence robots.

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