Learning Emotional Skills

with

QTROBOT

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Curriculum Description:

This curriculum focuses on teaching skills related to emotion recognition, understanding and regulation, allowing the learners to practice emotional skills in an engaging and step by step manner.

The curriculum is organized around six main topics of emotional abilities, each broken down into several units. In each unit, QTrobot practices a new skill over a variety of stimuli and provides the learner with multiple trials to support skill mastery. The skills are then repeated in later units to support the maintenance of the learnt skills.

In addition, QTrobot also actively involves the trainer in the sessions to facilitate the generalization of the skills and support the development of social interaction between the child and the trainer.

The topics covered by this curriculum are as follows:

- Emotion imitation
- Emotion recognition
- Emotion generation
- Naming emotions
- Emotion understanding
- Emotion regulation

Who Can Benefit from Our Emotional Ability Training Curriculum?

This curriculum is developed to support learners with autism spectrum disorder (ASD) who has difficulties in identifying, interpreting or responding to emotions. However, the application of this curriculum is not limited to learners on the autism spectrum. Other individuals with special need education who need support for emotional skills can also benefit from it.

The curriculum is not limited to a specific age group and can be used for the learners in the pre-school, primary or secondary school age as long as they meet the prerequisites of each module and they haven't yet developed the learning objectives of the module.

This curriculum can be used in special need education settings, as well as at home to boost learner's emotional abilities and help them to be more comfortable with interaction with peers and other people around them.

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Science Behind the Curriculum:

Our Emotional Skill curriculum combines a variety of **Evidence-Based Practices**, shown to be effective in improving the skills of learners on autism spectrum disorder:

- QTrobot uses **Modelling**, **Social Skills Training** and **Social Narratives** in teaching new skills to learners.

- It also uses **Verbal and Visual Prompting** to support the learners. Prompts are gradually faded out to prevent the learners from becoming prompt dependent and to support learners' independence.

- We provide high-level **Reinforcement** (verbal reinforcement, combined with facial expression and physical movement) when teaching a new skill and/or when an individual is showing major progress. The reinforcers are stronger when the learner is answering independently and they are thinned out when the correct response is after a prompt by QTrobot or by the trainer.

- Advanced units built upon and continue practicing the skills taught in earlier units to facilitate the M**aintenance of the learnt skills**.

- A core objective of the training is **Generalization**. The curriculum uses a variety of stimuli to facilitate generalization. In addition, the sessions include active involvement of the trainer where QTrobot diverts the attention of the learner to the trainer and asks the learner to practice the skills with the human partner.

- QTrobot as a **Technology Aided Instruction** facilitates the training by providing simplicity and frequent repetition. QTrobot has been scientifically validated to improve the attention and engagement of learners with autism. Also while practising a skill with QTrobo learners have shown less anxiety and stereotypical behaviours in comparison to the time that the same session is conducted by a human trainer. Therefore, QTrobot can improve the effectiveness of the training sessions.
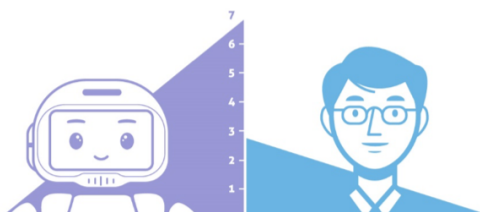
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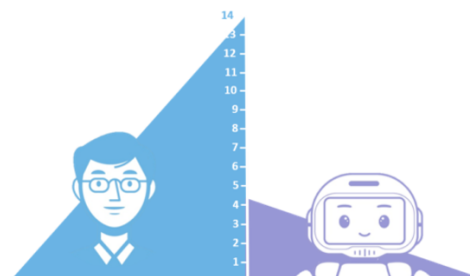
3 Times Less Stereotypical Behaviors *

* Costa et al, More Attention and Less Repetitive and Stereotyped Behaviors using a Robot with Children with Autism, Ro-Man 2018

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Prerequisites:

The curriculum is built up on levels. For every level, the learner needs to meet the prerequisites. If the individual has not mastered those prerequisites, then it's required to first teach those skills to the learner before going to the next level.

	Module 1	Module 2	Module 3	Module 4	Module 5	Module 6
Follow simple one-step instructions	■	■	■	■	■	■
Imitate 1-step instruction	■	■	■	■	■	■
Wait calmly	■	■	■	■	■	■
Demonstrate Joint attention		■	■	■	■	■
Respond by choosing an item in tablet		■	■	■	■	■
Receptive language of emotion words		■	■	■	■	■
Turn-taking		■	■	■	■	■
Expressive language of emotion words		■	■	■	■	■
Answer simple Yes/No questions			■	■	■	■
Answer basic questions			■	■	■	■
Make basic comments on images			■	■	■	■
Explain by using simple sentences			■	■	■	■

Best Practice Training and Repetition Intervals:

It is always possible and even recommended, to repeat a certain skill. It is possible to do that during the same day or the next days.

When a learner does not answer correctly and independently to 90% or more of the questions, it is advised to keep repeating the same unit until the learner masters the unit objectives.

If there is a daily practice but not improvement or progress over 3-4 teaching sessions, it is appropriate to change to another teaching objective and possibly return to the not mastered skill.

When a skill is mastered, it is advised to practise the skill again in 1-2 weeks and repeat this every few weeks to help the learner to maintain the learnt skill.

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Emotional Ability Training Curriculum Content

Module 1: Emotion Imitation

Unit 1	**Imitation of Facial Expressions**	Practicing imitation of facial expressions of emotions, Joint attention, following directions and practicing receptive language related to emotions
Unit 2	**Imitation of Body Language**	Practicing gross motor imitation, Joint attention, following directions and practicing receptive language related to emotions

Module 2: Emotion Recognition

Unit 1	**Recognition of basic emotions Level 1**	Practicing recognition of basic emotions (happy, sad, angry & scared) from smileys and QTrobot face, practicing the receptive language of emotions
Unit 2	**Recognition of basic emotions Level 2**	Practicing recognition of basic emotions (happy, sad, angry & scared) from cartoon characters, images of children and from the trainer, practicing the receptive language of emotions
Unit 3	**Recognition of basic emotions Level 3**	Practicing recognition of basic emotions (happy, sad, angry & scared) over 3 sets of human emotions to facilitate generalization, practicing the receptive language of emotions

Module 3: Emotion Generation

Unit 1	**Generation of Facial Expressions**	Practicing the generation of facial expressions after QTrobot naming the emotions, turn taking
Unit 2	**Generation of Body Language**	Practicing the generation of facial expressions combined with body langauge after QTrobot naming the emotions, turn taking

Emotional Ability Training Curriculum Content

Module 4: Naming Emotions

Unit 1	**Naming facial expressions**	Practicing recognition of emotions from QTrobot face, child images and trainer's face, practicing the expressive language of emotions
Unit 2	**Pantomime play**	Practicing recognition of body language of emotions from QTrobot, child images and the trainer, practicing the expressive language of emotions
Unit 3	**Naming facial fxpressions from videos**	Practicing recognition of emotions from videos, practicing the expressive language of emotions

Module 5: Emotion Understanding

| Unit 1	**Understanding the internal feeling of emotions**	Practicing understanding of the internal feeling of emotions, the body reaction to each feeling and the context that emotion are triggered
Unit 2	**Triggers of emotions**	Practicing understanding of emotions from context and connecting situations with their potential emotional outcomes
Unit 3	**Differentiate positive and negative emotions**	Practicing identifying positive and negative emotions and discriminating the emotions we like to experience from the ones we don't like to experience
Unit 4	**Differentiate normal and too strong emotions**	Practicing identifying situations in which emotions are felt too intense and identifying situations that emotions can cause negative outcomes
Unit 5	**Point of view**	Practicing understanding of the theory of mind and people's different feelings and reactions in the same situation

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Module 6: Emotion Regulation

Unit 1 **Calming Down Strategies** Practicing strategies to calm down and regulate emotions

Unit 2 **Reacting to various situations** Practicing understanding of emotions from context and finding the proper reaction to each situation

Unit 3 **Showing empathy** Practicing understanding of emotions from the context and how one can help others to feel better

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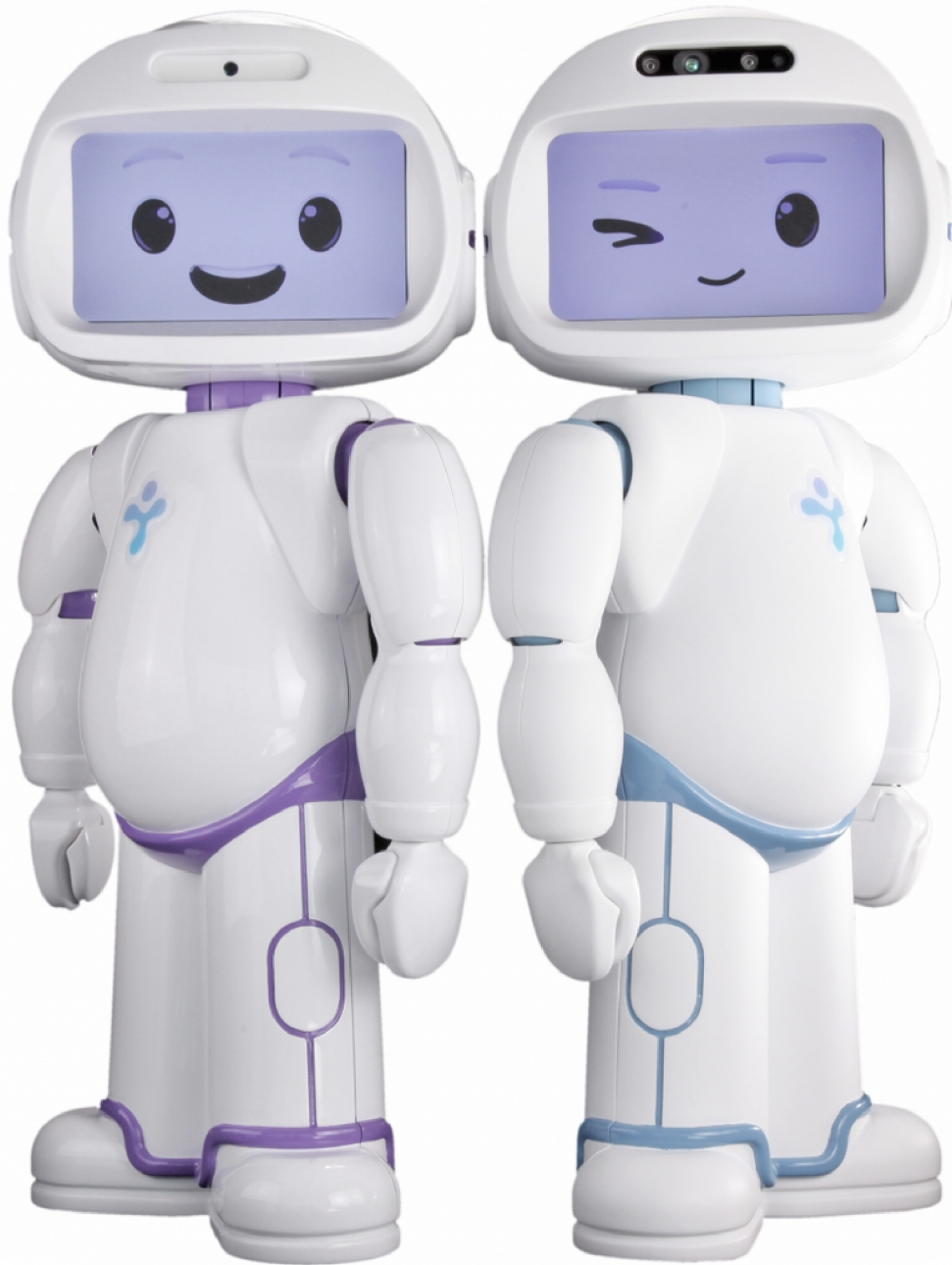
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