Exploring the Learning by Teaching Paradigm with Social Robots

Exploratory Studies on Learning by Teaching with Social Robots using Wizard-of-Oz Control

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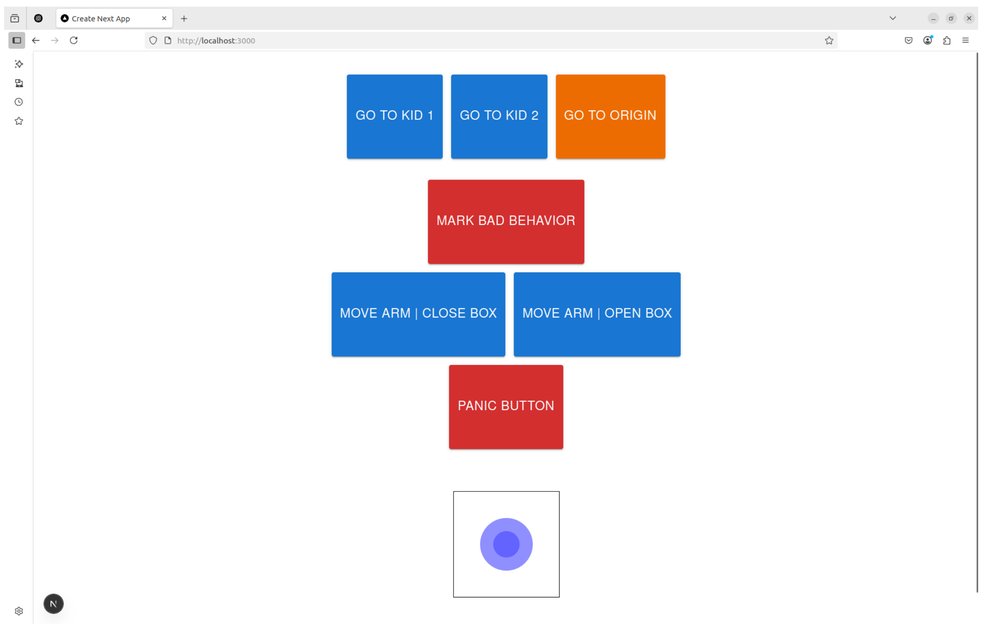
Project Objectives

Develop a socially expressive Wizard-of-Oz dashboard for intuitive robot control in child-robot interaction.

Explore how children teach and shape robot behaviour in collaborative scenarios, to inform future autonomous systems.

Walkthrough 1: Expert Feedback

1



Fixed positions didn't work

Children moved unpredictably during play, making joystick control a must.

Negative Feedback Was Entertaining

Spinning or dramatic motions were perceived as fun, potentially reinforcing misbehaviour.

Robot Seen as a Peer

Participants related to the robot more like a peer or playful companion than an authority figure.

Walkthrough 2: High School Students

2

LEDs Were Ignored

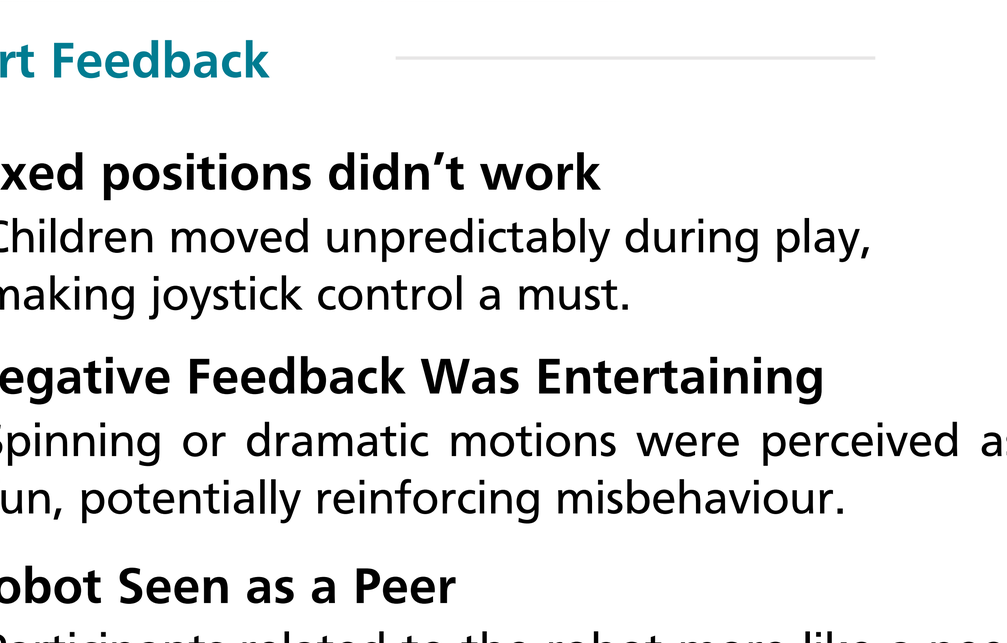
Red light alone wasn't enough to attract attention during play, especially on the floor.

Movement Was Attention-Grabbing

Quick approaches or changes in position effectively caught children's focus.

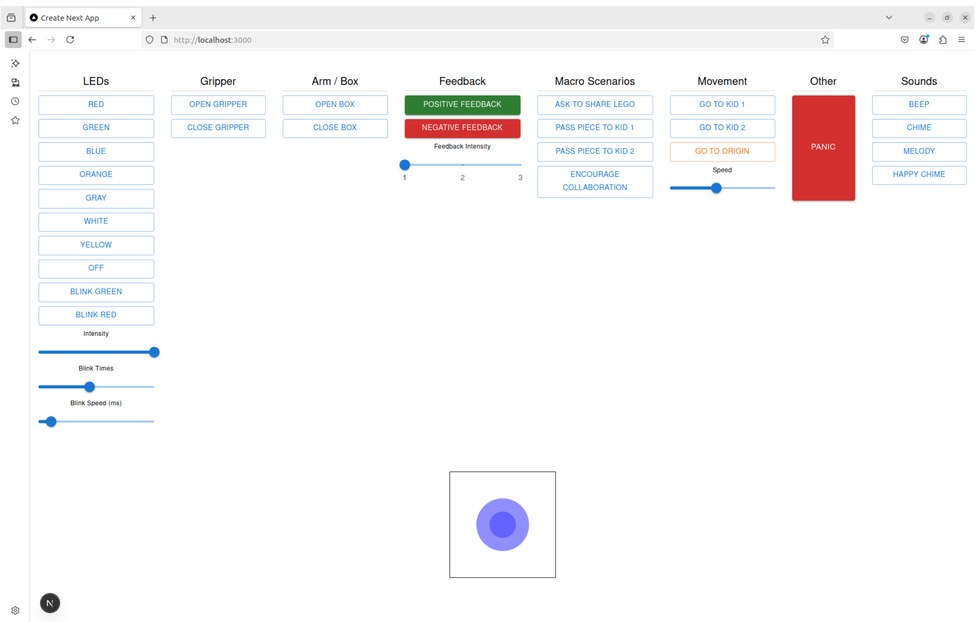
Naming Boosted the Engagement

Letting children name the robot increased their sense of connection and interaction quality.



Walkthrough 3: Middle School Students

3



Robot Seen as a Pet

Children treated the robot like a pet (e.g., decorating or petting it), reinforcing its peer-like framing.

Multimodal "Dances" Were Popular

Children loved expressive combination of lights, sound, and movement for positive feedback.

Emotion and Politeness Teaching Emerged

Kids naturally started to teach the robot social behaviours like keeping distance or expressing emotion.

Key Takeaways & Next Steps

Kids engage more when the robot is framed as a peer, not authority.
Multimodal feedback sustains attention better than LEDs alone.
Next: enable emotion-aware autonomy and support teachable, adaptive behaviour.