SKETCHING THROUGH THE BODY:
Child-generated gestures in Full-Body Interaction Design

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Purpose of Study
- Exploration techniques to design specific gestures with children based on the use of bodystorming and anthropomorphic puppets.
- Improvement of the interaction design of a Full-Body Interaction Learning Environment by giving a voice to children through Participatory Design.

Methods and procedure
- 17 children (11 girls and 6 boys), 10-11 years old.
- Two consecutive days; each of the two sessions had a duration of approximately 60 minutes.
- Children were randomly divided into 4 groups of 4-5 members.
- Introduction to the game by using role cards (Figure 3, right).
- Introduction to design goals by showing a diagram depicting the reciprocal relationships between the different game elements.
- Mid-fidelity Wizard of Oz prototype.
- Children were provided with cameras to record videos of their ideas and later they presented the design solutions to the entire group of the session.

Main Findings
- Sketching through the body and with puppets led children to different strategies and hence elicited different gesture designs.
- The most effective approach was when children switched between performing gestures with their own bodies and simulating those gestures with puppets.

EcoSystem Project
- Full-Body Interactive Learning Environment
- Improvement of children’s global understanding of environmental issues related to air-pollution.
- Children experimented with relationships between carbon dioxide emission and strategies for its reduction and absorption.

Discussion
This finding indicates the potential of those Participatory Design methods which combine multi-modal resources as instruments to allow children to reflect upon their own knowledge and express it more precisely.

In particular by role-playing through their body, children have become immersed in the challenges and then, by using the puppets they have had the opportunity of “stepping back” and externalize their ideas in a more concrete way.

Figure 1: Children in groups of four interacting with the floor projection of the EcoSystem Project.

Figure 2: Design draft of game setup.

Figure 3: Role cards with game instructions (right), Children using anthropomorphic puppets to design gestures (left).

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