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.

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

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.

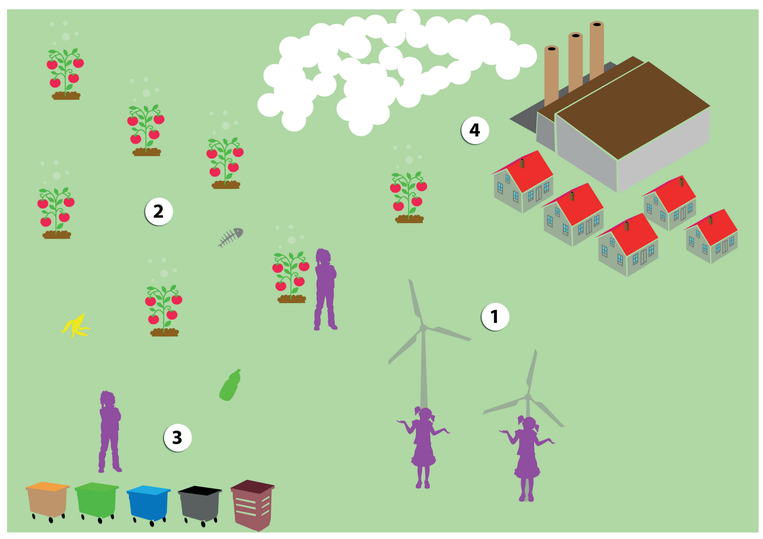


Figure 2: Design draft of game setup

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.

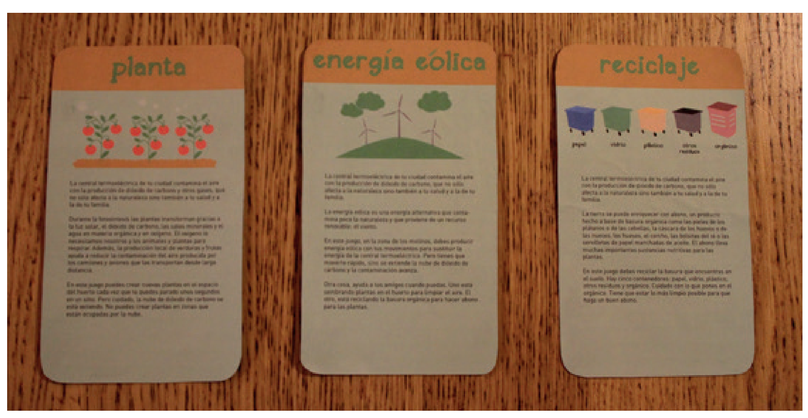
» Mid-fidelity Wizard of Oz prototype.

» 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.

The groups were alternately assigned to one of the two conditions:

Sketching through the body:
Children were asked to use their bodies to enact actions related to the environmental game and address the proposed design challenges.

Sketching with puppets:
Children were asked to use the anthropormorpic puppets (Figure 3, left) to design gestures or actions.



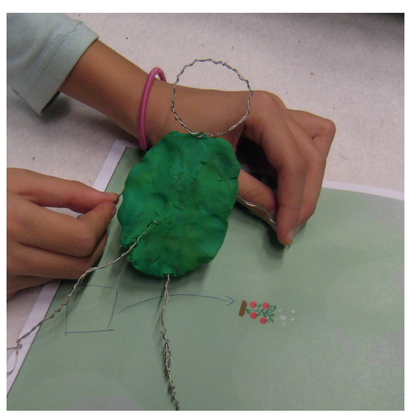


Figure 3: Role cards with game instructions (right), Children using anthropomorphic puppets to design gestures (left).

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.

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.

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