Participatory Design Methods to Define Educational Goals for Full-Body Interaction

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Purpose of Study:

» including children in the design of an Interactive Learning Environment based on Full-Body Interaction

» method based on using Participatory Design techniques

» analysis of *core meanings* and misconceptions of children about environmental issues

» identification of appropriate learning goals

» definition of concepts capable of bridging between children's knowledge and novel contents

» exploration of a novel approach aimed at fostering design methods suitable for a Full-Body Interaction experience

Workshop Activities:

Condition 1: bodily-based	Condition 2: verbal-based
Corporal exploration of space	Verbal exploration
Pictionary with environmental expressions Brainstorming »good and bad« Invention game through Narrative Inquiry Presentation of games	

Groups were randomly assigned to the following **warm-up activity conditions**:

1. **bodily-based training:** corporal exploration of the local space, pattern of movement and gesture coordination

2. **verbal-based training:** speech exploration and vocal coordination

Figure 1: Children during bodily-based training: corporal and spatial coordination

Evaluation:

» **analysis of children's mental models**
Analysis of video recordings, drawings and annotation through **Grounded Theory Approach**

» **assessment of effects of the warm-up activity**

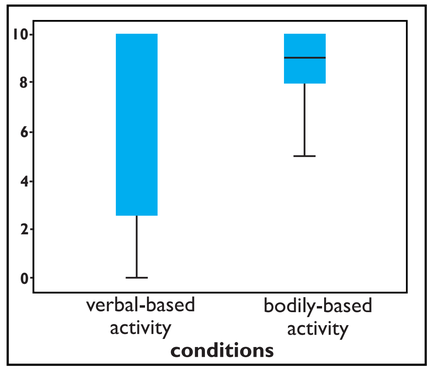
1. *Suitability:* likeability of the activities, how much the children felt engaged and involved
2. *Capability*: extent to which the activities can produce useful results for the design

Main findings:

» **analysis of children's mental models**

1. children have a clear idea of recycling and domestic practice
2. children report misconceptions related to balance/equilibrium and rhythm of nature

» **assessment of effects of the warm-up activity**



1. *Suitability:*
Children who started the workshop with bodily-based activities rated the activities significantly more positively than those with verbal-based activities.

2. *Capability*:
No significant difference was found between the two conditions.

Conclusions:

The method we used was very useful to identify learning goals and define bridging concepts between previous knowledge and novel concepts. This method facilitated formulating design guidelines for the development of a novel Full-Body Interaction Learning Environment.

Furthermore, we have undertaken a preliminary exploration of the possibilities of including body-based activities in Participatory Design.

Guidelines for Design Proposal:

» **potential topics**
meaning and reduction of contamination and balance of ecosystem

» **incorporation of bridging concept**
waste reduction and plant growing

Future work:

» deepen research on method to design through the body

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