



Beantable

Overview

Beantable is an **augmented interactive table**, which offers various educative and entertaining applications to children in the age range of 3 to 7 years old.

The purpose of Beantable is to support children's development through the monitored use of the embedded applications in an unobtrusive manner. Beantable monitors the children's interactions and extracts indications of the achieved maturity level and skills by taking into account:

- The way the child plays
- The selection of materials and game themes



Beantable: The augmented interactive table

Target Domains

Beantable provides a set of motivating smart games that will attract the attention of children throughout the age range that is targeted by the system. To this end, each smart game is being adapted continuously in terms of the interaction modality, content and/or task difficulty to meet the recognized skills and abilities of the child.

At the same time, parents are able to get information about the development progress of their child, including performance statistics and general information of the child's skills and abilities.

Furthermore, Beantable can act as a diagnostic tool that provides educators and child development experts with extensive data (extracted from the interaction history) that can be used for determining whether the child is meeting developmental milestones.



Playing an augmented jigsaw puzzle



Various augmented toys



Interaction with custom made stamp

Description

The table, which has been custom made, is a wooden prototype designed and built in order to be robust and transferrable. The height of the Beantable is **adjustable** in order to fit children's needs as they grow.

Beantable supports a number of alternative natural interaction techniques, integrating the following facilities:

- ✓ **gestures** recording, parameterization and recognition
- ✓ **face** tracking
- ✓ **head** position estimation
- ✓ **skeleton** tracking
- ✓ **speech** recognition

At the same time, a number of smart augmented artefacts have been implemented, including a **force pressure sensitive multi-touch surface**, a **smart chair** and a **smart pen**. Additionally, the table screen is able to recognize the location and the rotation of physical objects on the top.

The tracking infrastructure gathers data from sensors and games, providing indications about the achieved maturity level and skills of the child. Based on this feedback, the embedded games and applications are **adapted** in order to address the child's needs and requirements as they evolve over time.



Using the Smart Pen to draw variable size strokes



Virtual partner supports various modes of interaction like playful or didactic

Additional Information

Permanent public installations:

- Vikelaia Municipality Library, Heraklion
- Zappeion School for Girls, Istanbul, Turkey

Temporary public installations:

- HCI International 2014, Creta Maris, Heraklion, Crete



Beantable web page

www.ics.forth.gr/ami/project/beantable/

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