MalleablePillow – kneading light

Type of Project

Finished research project

Summary

The thought behind MalleablePillow is to explore continuous and co-located couplings tightly connected to the child when using his or her body.
The construct is a semi-transparent white fabric that encases groups of LEDs distributed along clusters of glass marbles and noisy packing materials. Each cluster has a microphone that picks up the kneading sounds from the materials. The microphone signal is filtered,
pre-amplified and used as an input to an Arduino board. The board controls the LED groups using PWM signals. The effect is that more kneading increases the light intensity of clusters close to where the kneading takes place (Figure 2). If the pillow is treated too roughly it will take on a redder behaviour.

Low-tech, high-tech products, services and contexts for play

By various bodily engagements the children have experienced creating sprinklings of light by themselves. They do this by essentially kneading the ephemeral material of light where they touch and according to the amount of touch.
With MalleablePillow, the children have explored and especially mused. As the design is quite tight, it has supported a feeling of agency. Yet, it has also aesthetic appeal through its coupling of touch and light. Sometimes, the design also seems to ‘call for attention’ as the microphones pick up distant loud sounds.

The context of use

home, rehab center

Type of play in this play system

Cognitive

Practice

Symbolic

Social

Solitary

Objectives related to play according to ICF-CY

Play for the sake of play: Major life areas - d880 enagement in play

d8800 solitary play

Play-like activities: Therapeutic and educational objectives

b1 Mental functions

b7 Neuromusculoskeletal and movement related functions

Number of participants

1-5

Chronological Age

0-3 years
3-6 years
6-12 years
12-18 years

Development Age

0-3 years

LUDI Categories of disabilities

Mental/intellectual impairments::
moderate
severe
profound
Communication disorders (speech and language disorders):
Physical impairments:
Moderate
Severe
Autism Spectrum Disorders:
Multiple disabilities:

Explanation on the use of low-tech, high-tech devices, services or contexts

Explanation

No instruction, self-discovery of the participant/subject
Hand over hand: therapist/researcher leads the actions of the participant

Involvement

Adult: therapist/educator/researcher
Parent or significant others

Role

Non-participatory observer

Evaluation of objectives and outcome measures

Description of outcome measure(s)

Observation by professional/researcher providing the play experience
Video analysis

Information about availability of outcome measure: publisher, website, contact person

This artefact is a prototype. See references for possible availability!

Summary of achieved effects

Motorics, coordination, attention, amusement

References to the intervention or research project

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Website

http://sid.desiign.org/portfolio/malleablepillow-erfaringer/

Publication

Caltenco, H. A., & Larsen, H. S. (2014). Designing for Engagement: Tangible Interaction in Multisensory Environments. NordiCHI ’14 Proceedings of the 8th Nordic Conference on Human-Computer Interaction: Fun, Fast, Foundational, 1055–1058. http://doi.org/10.1145/2639189.2670274