



# Design Guidelines for Diversity: Development of games and toys accessible to children with motor disabilities

## Type of Project

Finished research project

## Summary

Research was carried out to analyse the features of toys on the market and their suitability for children with special needs. A total of 1,131 toys were selected and assessed. The main goal of the analysis was to examine toys available on the market and assess their suitability for children with motor disabilities and visual and hearing impairments.

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

Research was carried out to analyse the features of toys on the market and their suitability for children with special needs. A total of 1,131 toys were selected and assessed. The main goal of the analysis was to examine toys available on the market and assess their suitability for children with motor disabilities and visual and hearing impairments. For many children with motor disabilities, being able to activate a toy with a push button is not an isolated action, but the first step to accessing other devices, such as a computer, a communication device, a TV remote control, a light switch, etc. Therefore, toys with buttons they can push by leaning on are highly recommended for them. In addition, it is a good idea for these children to have access to toys that represent their own reality; toys they can identify with. The implementation of new technologies is making this easier by offering vast possibilities for customisation. For instance, 3D printers allow children to design their own toys. Other technologies, such as interactive online connective toys, interactive surfaces or augmented reality, also represent very good opportunities for all children to enjoy playing in fun, new and innovative ways.

## The context of use

Home y school

## Type of play in this play system

### Cognitive

Practice

Symbolic

Constructive

Rule play (including videogames)

### Social

Solitary

Associative

## Objectives related to play according to ICF-CY

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

d8800 solitary play

d8803 shared cooperative play

## Community social and civic life - d920 recreation and leisure time

d9200 play

### Play-like activities: Therapeutic and educational objectives

b2 Sensory functions and pain

d2 General tasks and demands

### Number of participants

>20

### Chronological Age

0-3 years

3-6 years

6-12 years

### Development Age

0-3 years

3-6 years

6-12 years

### LUDI Categories of disabilities

Mental/intellectual impairments::

Hearing impairments:

Visual impairments:

Physical impairments:

Multiple disabilities:

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

#### Explanation

No instruction, self-discovery of the participant/subject

#### Involvement

Adult: therapist/educator/researcher

Peer with disabilities

#### Role

Non-participatory observer

### Evaluation of objectives and outcome measures

#### Description of outcome measure(s)

(validated and reliable) outcome measures like tests, self-reports of client/system, questionnaires

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

<http://www.guiaaiju.com/2015/docs/juego-juguete-y-discapacidad.pdf>

### **Summary of achieved effects**

Design guidelines for diversity taking into account universal design for new toys and "tech" toys in the market.

### **References to the intervention or research project**

Maria Costa  
mcosta@aiju.info

### **Contact Person**

Maria Costa  
mcosta@aiju.info

### **Website**

[www.aiju.info](http://www.aiju.info)  
[www.guiaaiju.info](http://www.guiaaiju.info)

### **Publication**

<http://www.guiaaiju.com/2015/docs/juego-juguete-y-discapacidad.pdf>

### **Keywords**

Design for all, accesible toys, guidelines.