Co-design games

with children

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Highlights

Part I: Background on co-design

- Introduction to co-design terminology
- The role of children in the design process

Part II: Children as Design Partners

- Research methods
- Research projects

Background on co-design

Part I: Background on co-design

- Introduction to co-design terminology
- The role of children in the design process

Design for children

- iCHILD generation
- Children are naturals partners for co-design
- How to co-design with children?
  - set of tools and words acceptable
  - knowledge and preparation

What is CO-DESIGN

“collective creativity as it is applied accross the whole span of a design process”

Requirements

Designing and ptototype

Evaluating

It's not the end of the process but it provides invaluable insight.

Level of participations

" The role of children in the Design of new technolgy"

Design partner

Collect data and initiate ideas
Collaboration during development

Informant

Information during development

Evaluator

Test prototype

User

Test

Children as design partner

Part II: Children as Design Partner

- Research methods
- Research projects

Generative vs Formative Methods

Types of methods

for self usage

for on site research

for on line research

Generative

Formative

Generative vs Formative Methods

Types of methods

for self usage

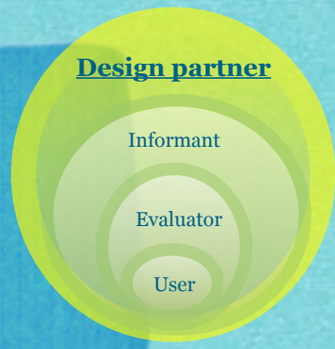
for on site research

for on line research

Generative

Formative

Co-design typical tools



- Collage
- Context mapping
- Storytelling
- Inspiration cards
- Modeling
- Paper prototyping and sketching
- Games-like structure

Generative vs Formative Methods

Types of methods

for self usage

for on site research

for on line research

Generative

Formative

Conceptualization products

From generative methods to formative methods

State-of-art

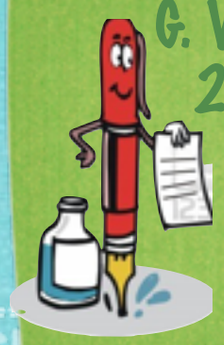
- **Cooperative inquiry**
  - Low-tech prototyping
  - Contextual inquiry
  - Technology immersion
- Mixing ideas
  - Sticky note frequency analysis
    - Layered elaboration

Innovative

- Expanded layered elaboration
- Making tools
- Embodied narratives
- Adapted methods for child with special needs

Research Projects

Research Projects



WII Can do it:

Using co-design for creating an instructional game

Users: 9 children from 7 to 11 years old (grouped in team)

Methods: cooperative inquiry

Goal: design an instructional game that leveraged the Nintendo Wii's motion controls to teach about U.S. National Parks or historical events.

Session 1

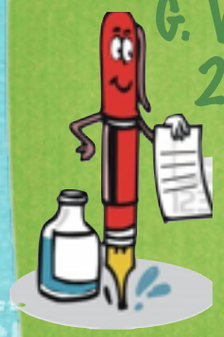
- play and journal session
- feedback session
- clustering ideas and debriefing

Session 2

- design with prototype
- bags of stuff
- debriefing to sharing

Session 3

- mixing ideas
- one cohesive idea
- final design



G. Walsh, 2009

WII Can do it:

Using co-design for creating an instructional game

- Enjoy to collaborates with others child
- Experience very social
- Time travel, adventures and mission to solve

- Difficulties with WII controller
- Would more realistic character

Value of the avatar (role and features)

Layered elaboration

A new technique for co-design with children

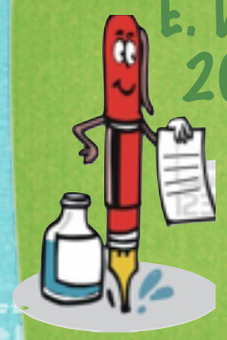
Users: children from 7 to 11 years old

Methods: layered elaboration

Goal: design an instructional game about energy conservation

Sessions:

- Team: 1 adult and 3 children
- 3 session of about 15 minutes
- Storyboard on a piece of cardboard with transparent overlay on top
- Iterative process through drawing and narration
- Stand-up meeting
- Big Idea



Layered elaboration

A new technique for co-design with children

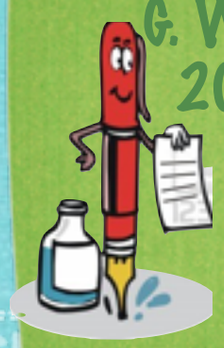
Findings:

- The **cost** of the materials is low.
- The **portability** as a co-design tool.
- **non-distructive** design annotation
- Their relatively **rapid** iterative nature

- **Limited attention** of children during debriefing
- Use of specific **permanent markers**

Increasing Participant Ownership

Inter-Group Collaboration



DisCo:

a co-design online tool for asynchronous distributed child and adult design partners

Users: 20 children from 7 to 11 years old and 12 adults

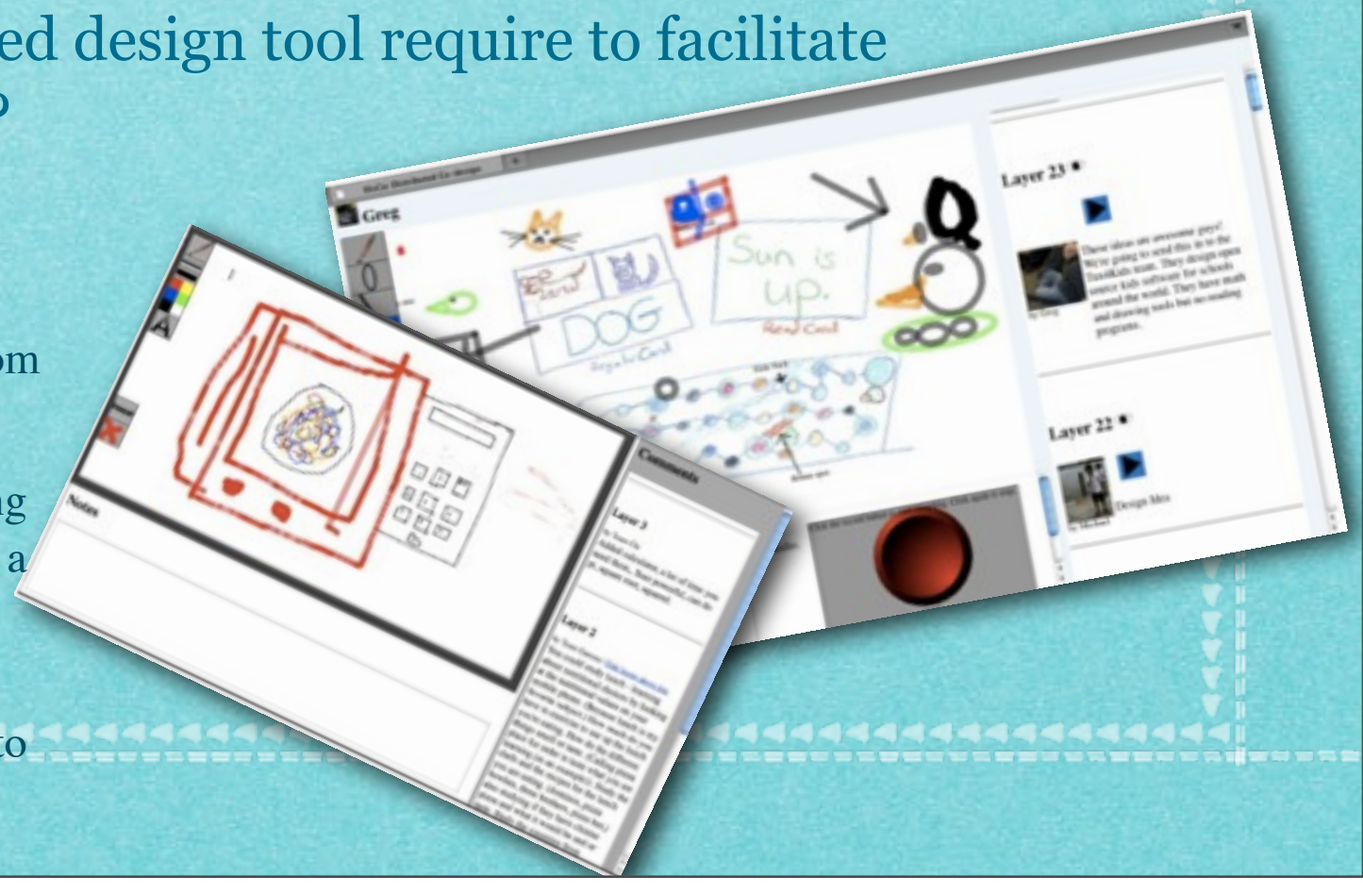
Methods: expanded layered elaboration technique

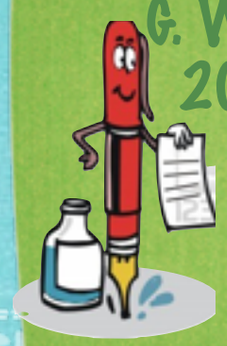
- A distributed co-design tool: cooperative inquiry + layered elaboration on an on-line tool

Goal: What does a computer-based design tool require to facilitate distributed co - design with children?

Sessions:

- team : 1 adults and 1 children into two different room
- 5 version of the prototype and 10 minutes to design.
- Task (e.g. design a mobile user interface for doing homework or design a device that help u to read a book)
- Observations, comments and discussion
- Each sessions give suggestion and new features to add for the next prototype





G. Walsh
2011

DisCo:

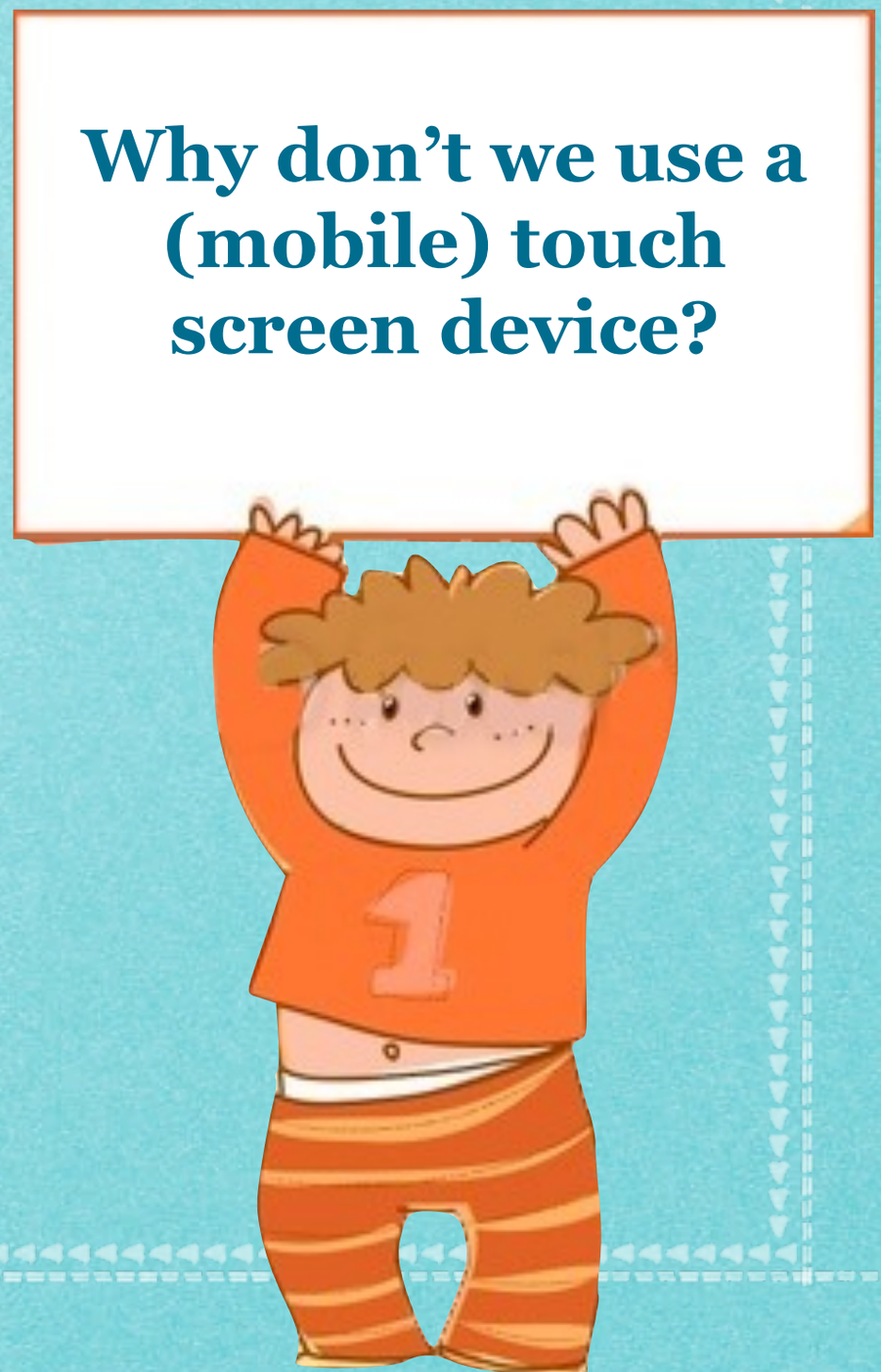
a co-design online tool for asynchronous distributed child and adult design partners

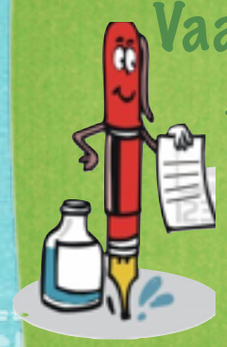
Findings:

- Enabling geographically **distribuited** co-design
- Creation of their own **intergenerational** design **teams** at their end
- **“Ad hoc”** additional design **features**

- Higher expectations
- good-faith effort elaboration between related co-designer

Why don’t we use a (mobile) touch screen device?





Make tools

"It has to be a group work!" :co-design with children

Users: 23 children from 7 to 8 years old

Methods: Make tools

Goal: create an intelligent interactive device that supports learning and collaboration in teams.

Experiment 1 and sessions:

Starting point for ideation:

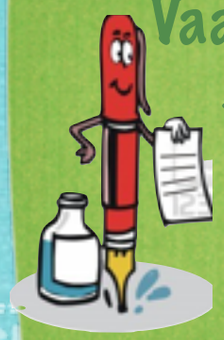
- school book familiar to the children
- task: create a learning buddy

Building a learning buddy

- Use of make tool kit
- block with various shapes and sizes
- buttons that have symbols such as question marks, snowflakes and word including 'help' or 'error'

Make session

- Design
- Final discussion



Make tools

"It has to be a group work!" :co-design with children

Users: 23 children from 7 to 8 years old

Methods: Make tools

Goal: Design with game-like structure

Experiment 2 and sessions

Diving into the topic

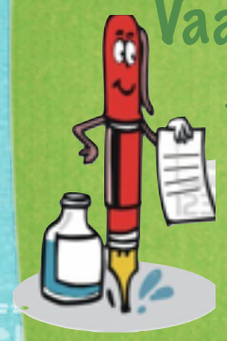
- Simpson movie
- Task: help Lisa to save the Planet

Scenario building game

- build scenarios of every day life by playing an 'eco-game'.
- eco-game : throw a dice and move their game pieces on the board turn by turn.
  Use of Instructional cards

Make session

- Design a magic tool or a secret weapon to save the earth
- Using of make tool kit



Make tools

"It has to be a group work!" :co-design with children

Findings:

- Facilitate equal participation in children's co-design
- Game-like structure support collaboration
- More active and collaboration to better access the tangible materials

- Limitation due to a classroom rules
- Low age of the children
- Too many rules and tasks confused the children
- Gap between Real Life and Design Ideas

Use of physical objects and tangible prototype

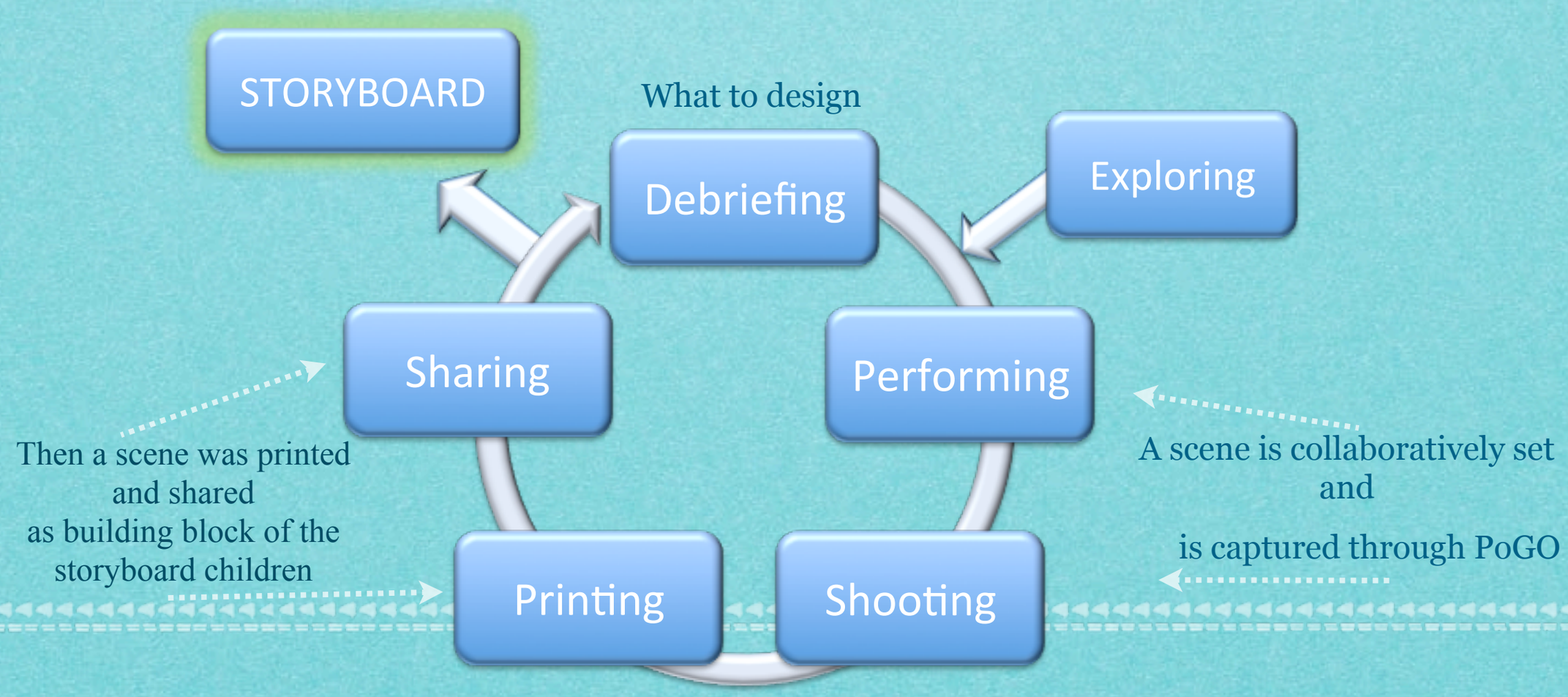
P. Diás, 2012

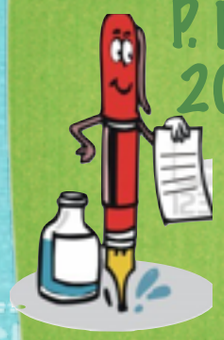
Embodied narratives

Users: children from 7 to 11 years old

Methods: Embodied narrative (for social games)

- a co-design technique to create engaging social games with and for children through physical manipulation of 'ready-made' objects and improvisational performance.





Embodied narratives

Users: 36 children from 10 to 11 years old (8 team)

Goal: design of a social game meant to help children learn how to respond to emergency situations that can occur at home or at school.

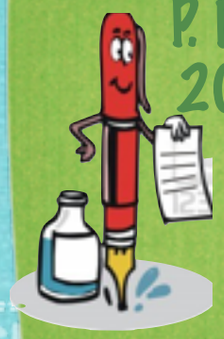
Session:

Case of study

Dangerous Homes
- 1 group of 8 children

Dangerous at school
- 28 children in 6 groups-

- Use of the **Polaroid PoGo** instant digital camera
- Paper roll, markers, color paper, scissors, and glue to build the **storyboard**
- Final debriefing



Embodied narratives

Findings:

- increase **freedom** for children to dialogue and express their perceptions of the adults' world

- facilitate **rapid** and **iterative co-creative events** that remove the stress often entailed by differences between children's skills and a concern for the prototyping of solutions

- use of POGO polaroid is too **expansive**

- real-world settings require careful **supervision**

- difficult to video record children's activities

Active participation and spontaneously assuming and exchanging roles

Conclusion

CO-DESIGN:

- Increasing collaboration and social inclusion
- Use of new devices
- Physical objects and tangible prototype.
- Use of avatar
- Reach positive results for the final products

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