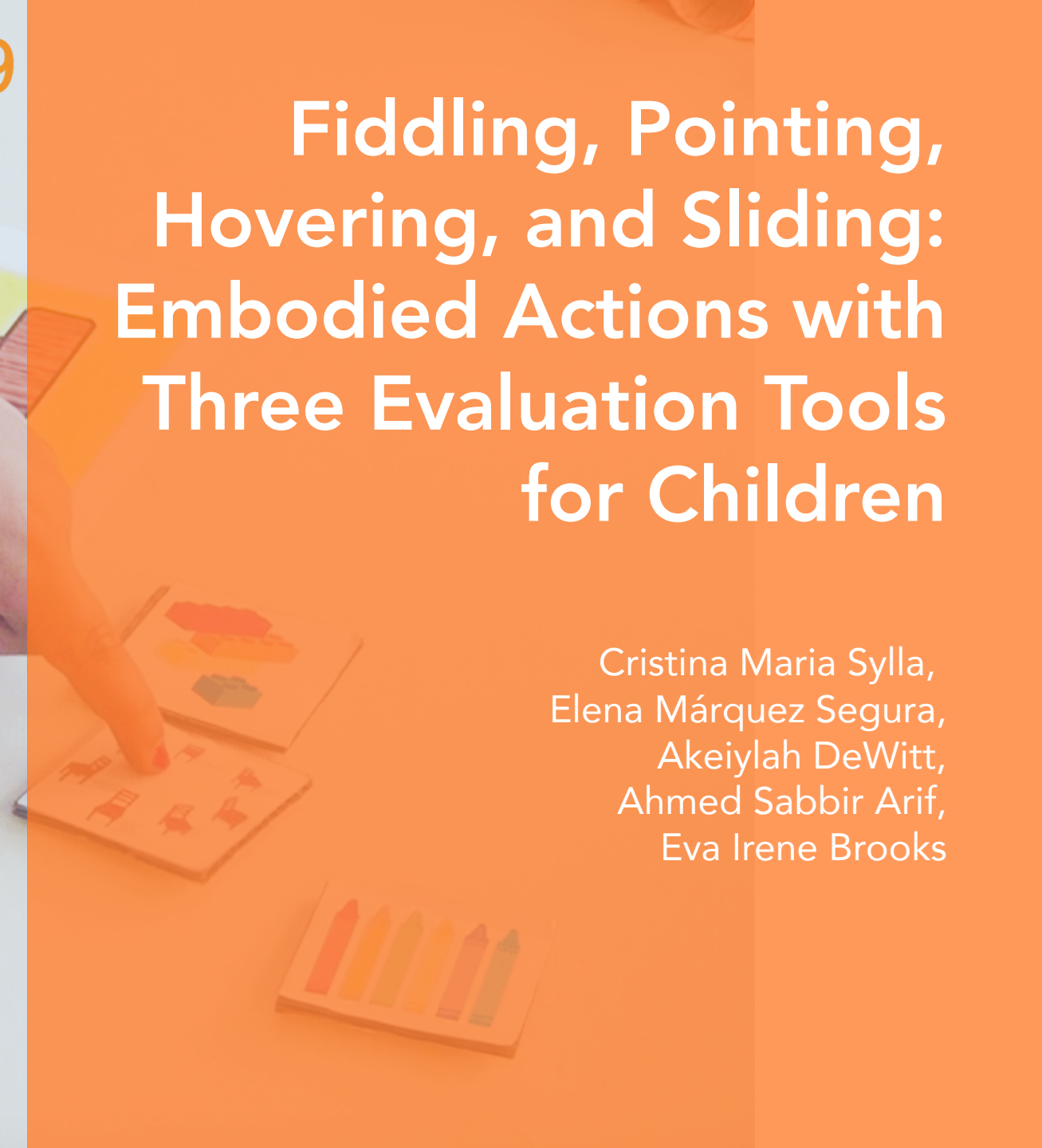




CHI PLAY 2019

Fiddling, Pointing, Hovering, and Sliding: Embodied Actions with Three Evaluation Tools for Children

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CHI PLAY 2019

Fiddling, Pointing, Hovering, and Sliding:
Embodied Actions with Three Evaluation Tools for Children

Collecting young children's opinions in user studies is challenging





USER STUDY

Participants: 36 preschoolers (age 3 to 6)

Three Evaluation Tools

Sticky Ladder

Paper Ladder

Five Degrees of Happiness

Evaluation of tree Play Related Activities

Painting

Construction Blocks

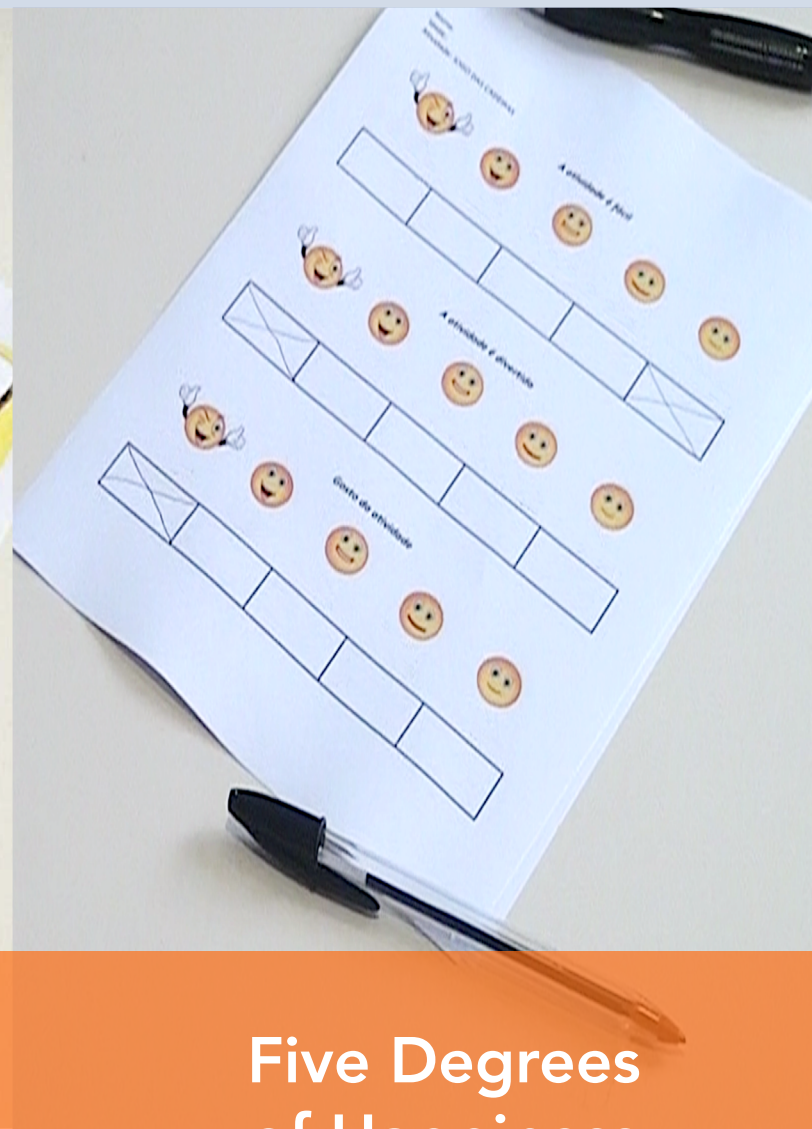
Musical Chairs game.



Adapted
Sticky Ladder



Paper Ladder
(Sylla et al., 2017)

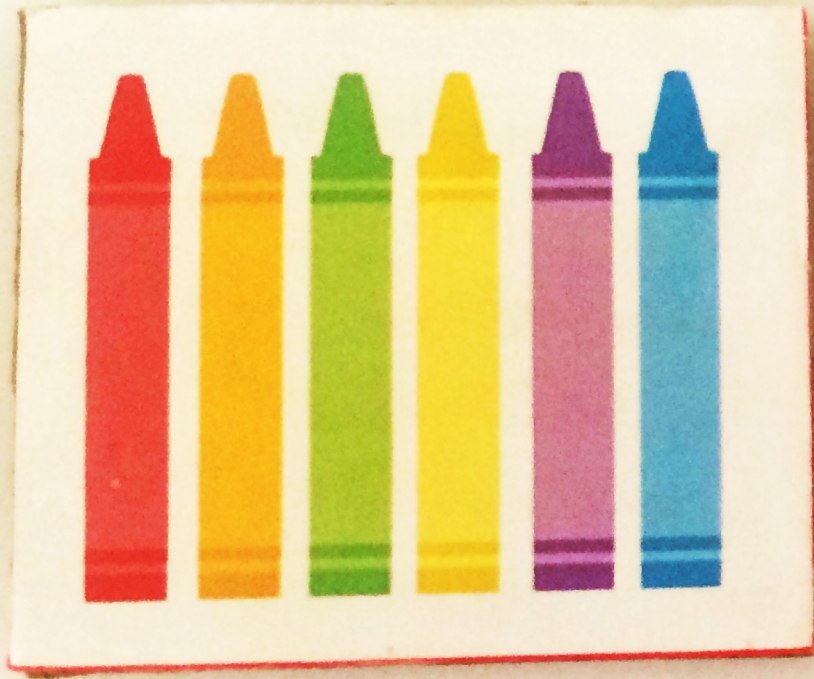


Five Degrees
of Happiness
(Hall et al, 2016)

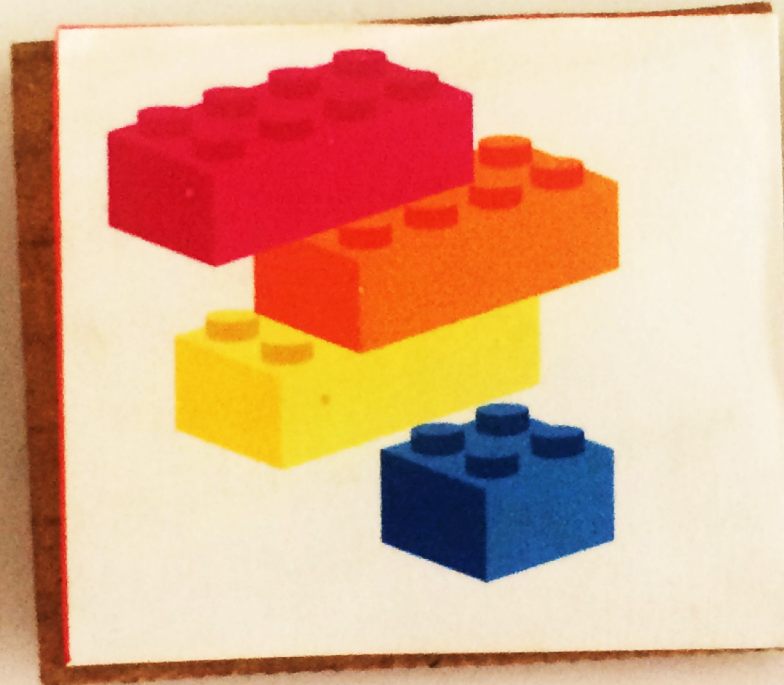


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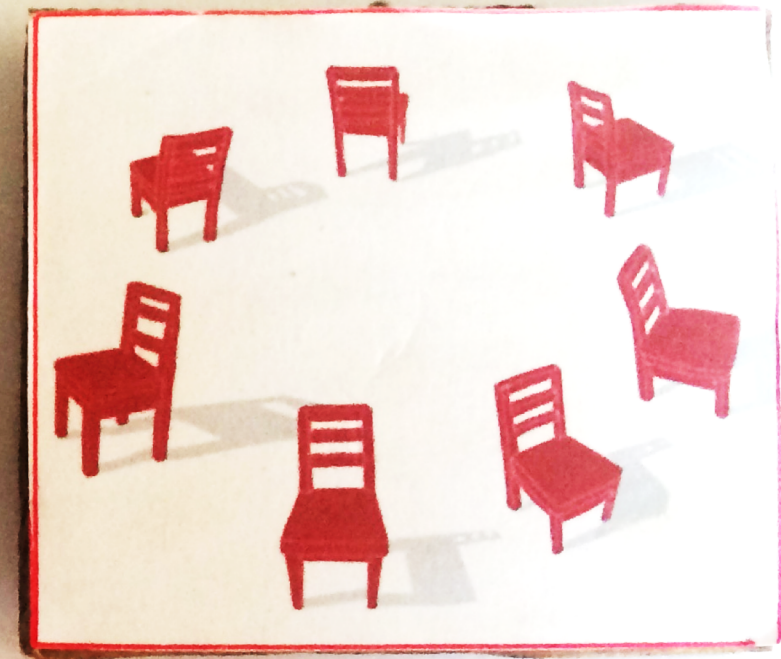
Fiddling, Pointing, Hovering, and Sliding:
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Painting



Construction Blocks



Musical Chairs Game



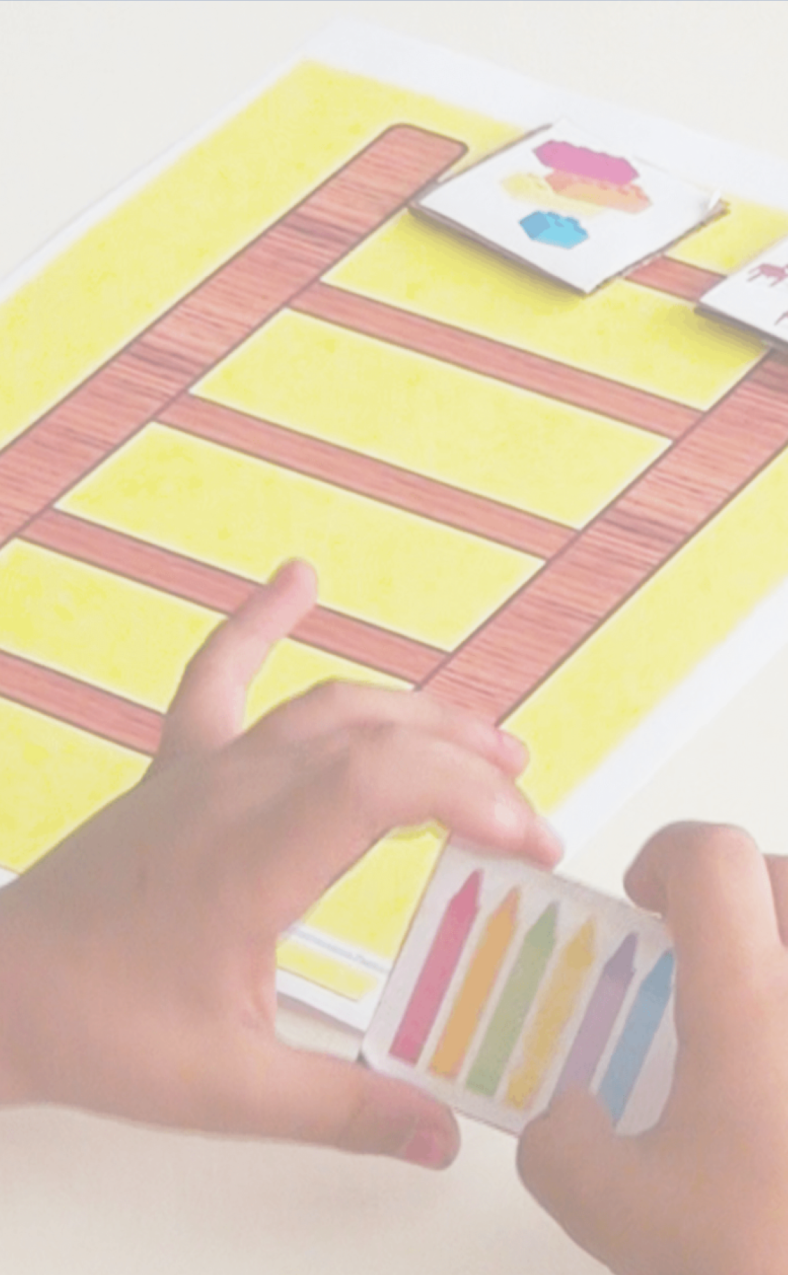
Evaluation Methods for Children Exist, but have Shortcomings

e.g. not often using scores in the middle of scale,
children using responses on the extreme side of a scale
(Chambers., 02)

Five Degrees of Happiness Rating Scale (Hall et al., 16)
Popular smiley-based Likert scale

Sticky Ladder (Airey et al., 02)
allows comparison between multiple products at the
same time, enables rating multiple different factors (e.g.
Enjoyment, Liking, Fun...)

Paper Ladder (Sylla et al., 17)
simplified paper version, low-cost, easy to deploy



Theoretical Underpinning

We think with our whole body

We think through our interactions with others, and the physical environment (Kirsh, 13)

Gestures and bodily action
manipulation of objects and icons are part of a thinking process (Kirsh, 13)

Fiddling - small and repetitive body movements with(out) objects (Caillois, 61)

Hovering and Sliding items - related to (Kirsh, 13) Projection and Perception



METHOD

Drawing from theories of embodied and distributed cognition

Video analysis of embodied actions

Analysis focusing on how the evaluation tools supported children's cognitive processes; communication between children and researcher; and social construction of meaning





Embodied Behaviours and their Relationship to Design Features of the Tools

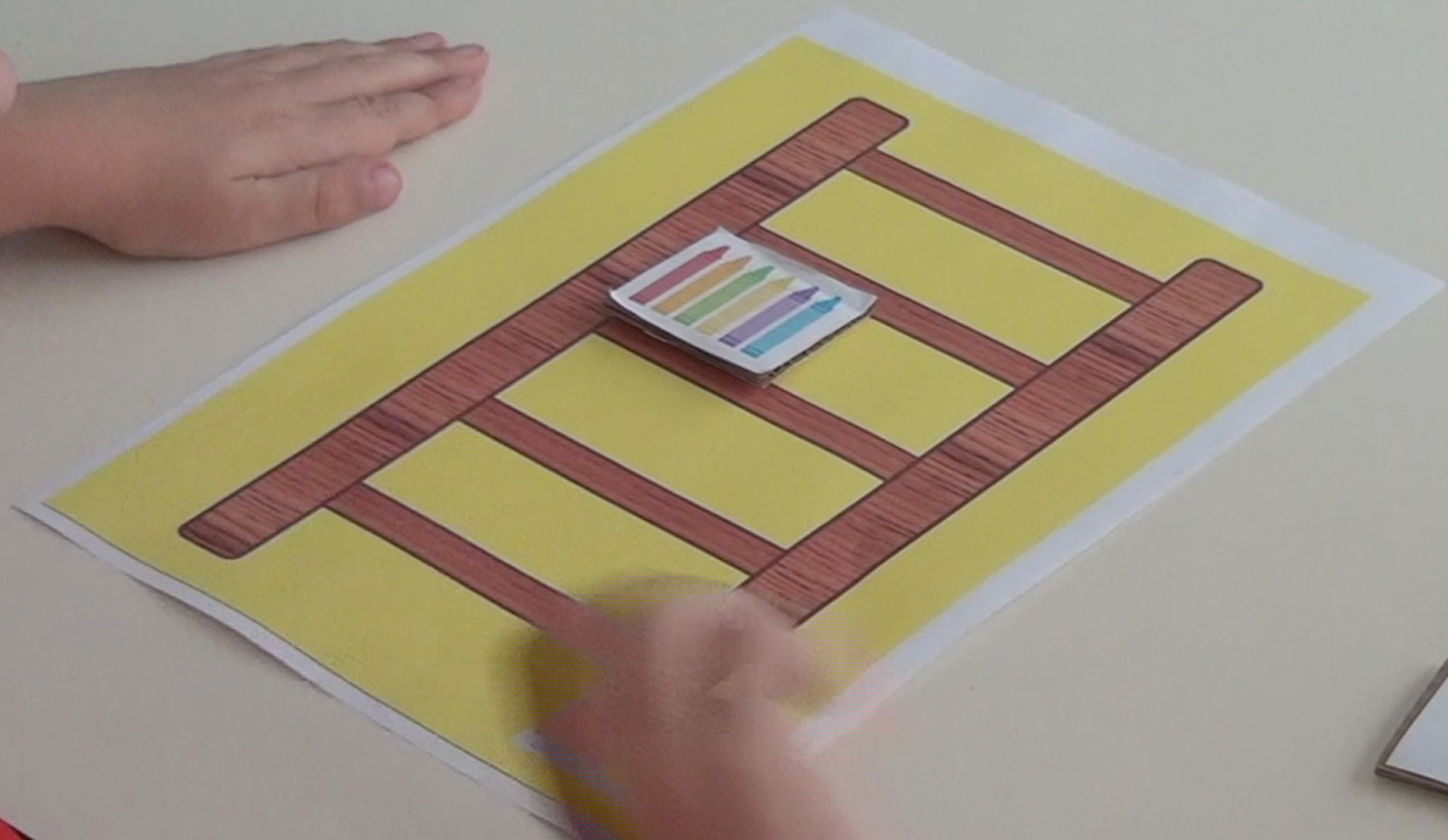
Fiddling, projecting, and thinking gestures
Sliding
Hovering



Number of Coded Gestures for the Methods

Coded behaviour

METHOD	THINKING GESTURES	FIDDLING	SLIDING	HOVERING	TOTAL
Sticky Ladder	73	53	0	47	173
Paper Ladder	27	26	21	22	96
5D Happiness	23	6	0	22	51





Strengths and Shortcomings of the Methods

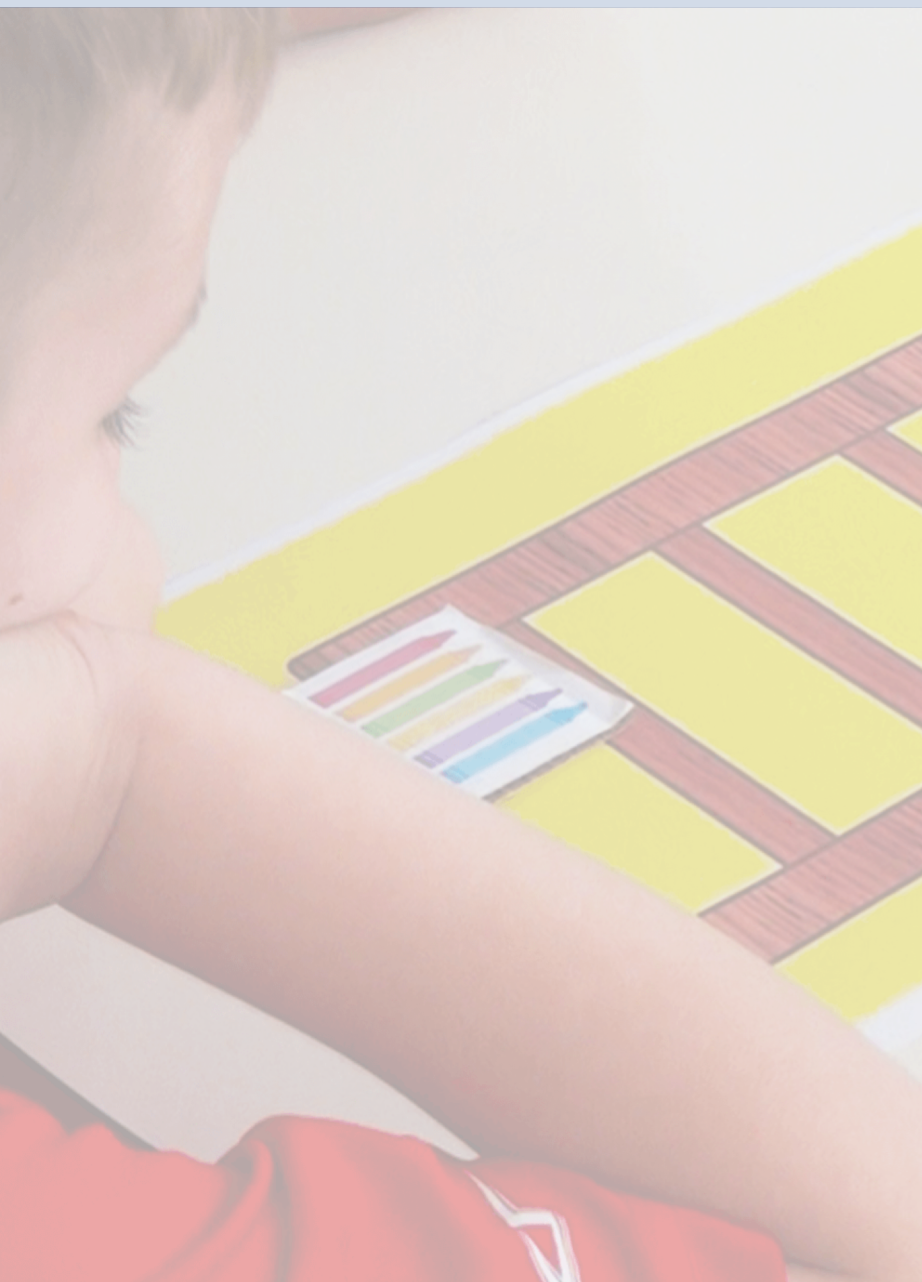
Overall, the ladders had advantages over the Five Degrees of Happiness Rating Scale:

- Identification of the activity under evaluation

- Revocable responses

- Items manipulation: explanation, engagement, and visibility of thought

- Cultural metaphor



Design Recommendations for Appropriate Usage of the Tools

Paper Ladder

Material and performance preparations

Sticky Ladder

Crucial material issues to consider

Five Degrees of Happiness Rating Scale

Visualisation of the activity

mobeybou.com (downloadable materials)



CONCLUSION

The Ladders suitable for game user research with children

evaluation of game elements
(e.g. fun and enjoyment)

preferences for particular game characters

narrative turns of a digital game

key game core mechanics



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THANK YOU

mobeybou.com
(downloadable materials)

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