Paper Ladder: Rating Scale to Collect Children's Opinion in User Studies

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Paper Ladder is a low-cost, light-weight, and paper-based variant of the Sticky Ladder rating scale to collect children's product preferences in user studies.
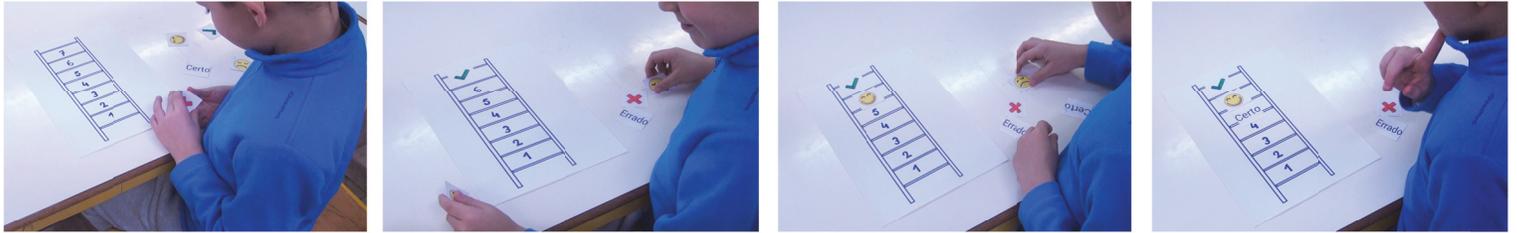
Figure 1- A child using Paper Ladder.

GOAL

To investigate the potential of the Paper Ladder to collect children's product preferences in user studies, i,e,:
Ease of use of the Paper Ladder from the perspective of the children and the researchers;
Data variance: whether and how children's responses varied over the whole scale;
Advantages of using manipulation of the cutout items to evaluate the products instead of verbalizing preferences;
Insights into children's thinking process while they are comparing and manipulating items.

PILOT STUDY

Paper Ladder was used to assess children's preference of different types of correctness feedback used in a custom math app.
The app presented children with questions for addition and subtraction.

The study followed a mixed design:
3 groups of 15 children each (average age 7.06 years);
3 feedback types (Textual, Icon, Emoticon);
3 sessions with alternating difficulty levels;
Independent variables /conditions: Feedback Type X Difficulty Level.

PAPER LADDER
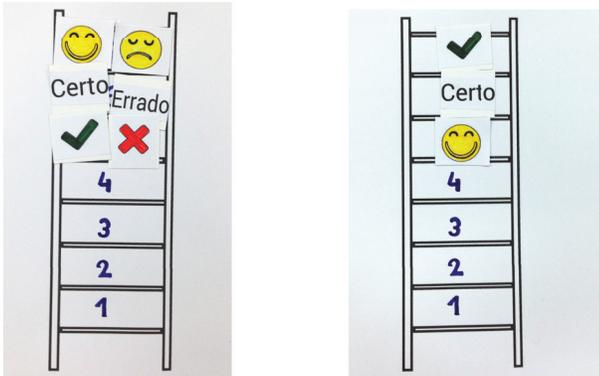
Figure 2- Two completed Paper Ladder rating scales.

The Paper Ladder deploys the Sticky Ladder rating scale and its items (i.e., the products under evaluation) on printed cutouts instead of a stuffed ladder and items that can be attached with Velcro.

It consists of a printed ladder on an A4 sheet of paper and product pieces created by cutting small pieces of paper (50×50 mm) with the pictures of the products under evaluation (Figure 2).

The cards are not adhesive, thus can be freely moved around the ladder.

EVALUATION

Paper Ladder was easy to use for the children (Figure 2) and for the researchers since it only took some minutes to customize;

The children mapped the paper pieces to the feedback types easily;

The physicality of the tool made it easier for them to visualize their ratings and rearrange them by sliding the cards on the ladder before finalizing their choices;

Children seemed to feel comfortable and enjoy using the scale.

Regarding the quantitative results, the method was successful in collecting data with a relatively high degree of variability (Figure 3).

This suggests that the Paper Ladder encourages the use of points at the middle of the scale, providing an effective method for collecting children's opinion in empirical studies.
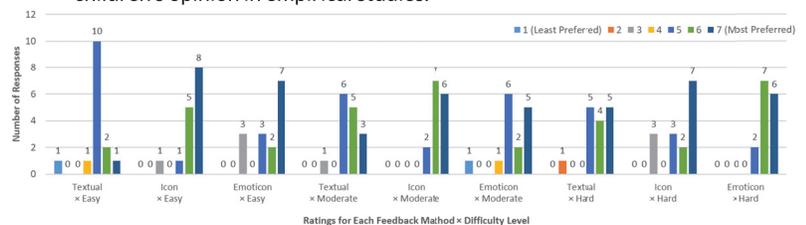

Figure 3- Variation of children's ratings across the scale.

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