

Pick, Place & Follow: A Ball Run for Visually Impaired Children

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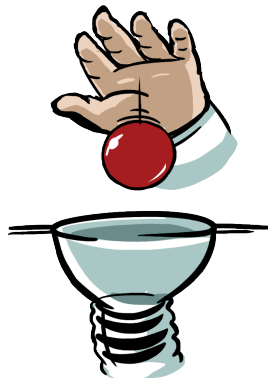
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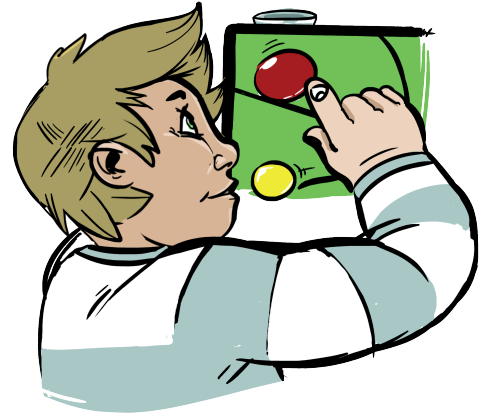
Conventional ball runs are usually made from wood and used with marbles. Their easy handling and comprehensible principle of action and reaction – a marble placed into it will run down the slope – make them a popular therapeutic toy among occupational therapists and related professionals when exercising with impaired children. However, traditional ball runs are often too fast paced and not perceivable for children with low vision, making it impossible to fixate the moving ball with their eyes. We created a virtual ball run with tangible elements to extend it with properties only the digital can afford, for example, magnification of the marbles or change of color or physical behavior of the ball run in order to support visually impaired children in tracking them with their eyes.



Pick

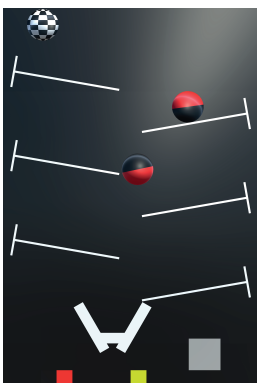


Place



Follow

Control the properties e.g.
size, contrast & patterns and **speed** of the balls



The ball run is a prototype from a participatory design process involving therapists and children with Cerebral Visual Impairment. We employed an interactive and lo-fi implementation to test the overall acceptance of the concept with children and to gather feedback from ophthalmologists. We will go on to implement different ball run tracks and effects (game elements with different modalities, etc.), supporting additional therapeutic goals. Motivated by the ophthalmologist, we will also research into the feasibility of supporting visual tests by offering specific ball-run elements and setups, able to test certain examination goals (e.g., peripheral vision). For the evaluation we aim at long-term field deployments in the children's homes to gain holistic insights of how the ball run is perceived by different children with different needs.

More information about our research on CVI and interaction design is available at <http://guelden.info/sk.html>
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