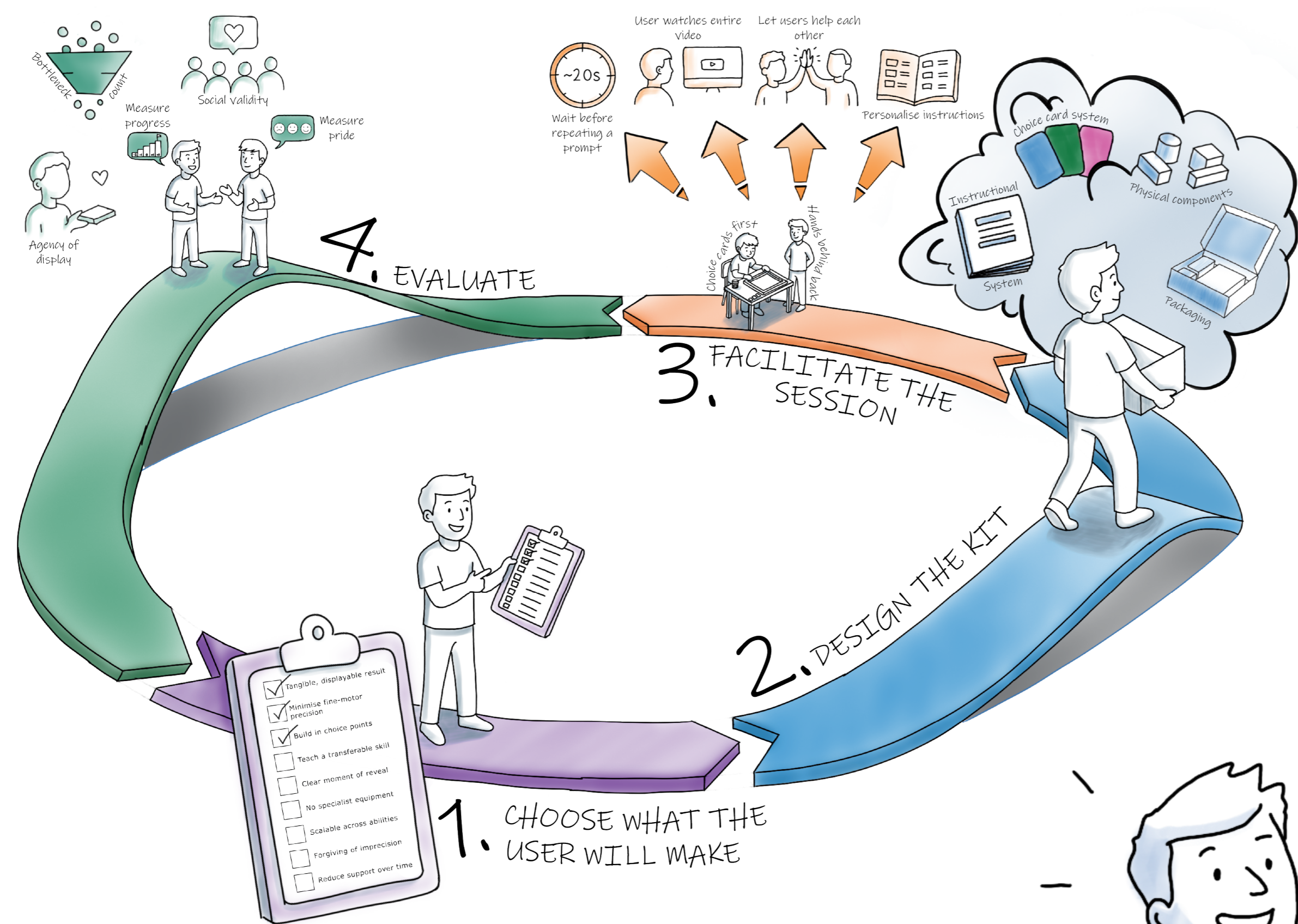
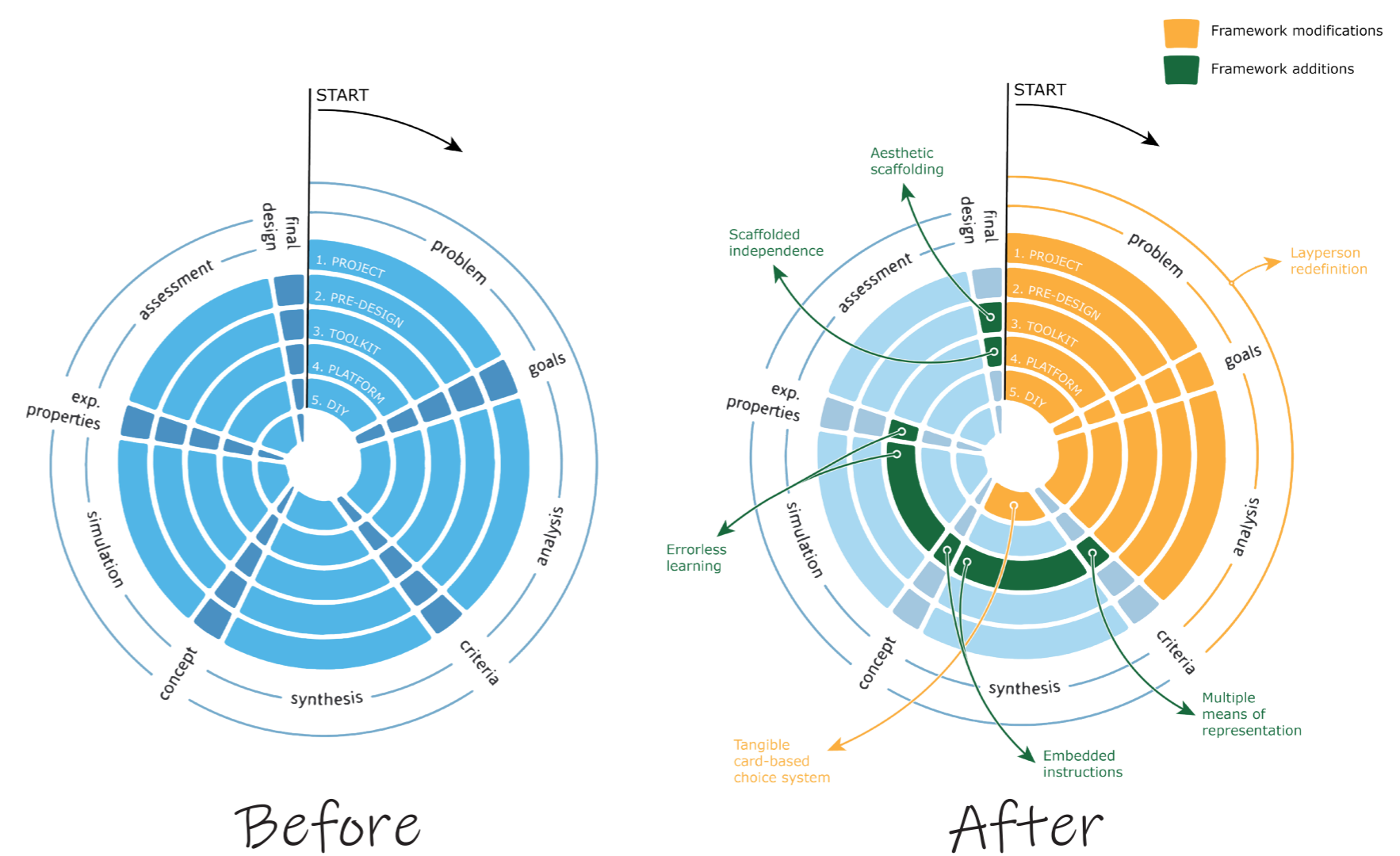


DOWN TO MAKE

A Design for Do-It-Yourself buildkit for makers with Down syndrome

The gap

Hoftijzer's Design for DIY framework promises to democratise making, shifting the designer from creator to facilitator. But it quietly assumes a "layperson" with neurotypical cognition and standard dexterity, an assumption that, for example, excludes people with Down syndrome from maker environments. Why this matters: nearly 100% of adults with Down syndrome report feeling underestimated by society. This project asks how the framework can be adapted so the barrier disappears entirely, not by lowering the bar or simplifying the task, but by rethinking the tools, instructions, and environment.



The adapted framework

Through literature review, expert interviews, and two rounds of research-through-design, the DfDIY framework was extended for this group. Three elements were kept, two adjusted and five added. Co-creation was restructured from abstract verbal choices into a tangible, card-based system. Embedded instructions were built into the tools themselves, errorless learning, multiple means of representation, aesthetic scaffolding so the artefact looks professional regardless of motor precision, and scaffolded independence that grows across a curriculum of kits.

The proof

These principles were embodied in a screen-printing buildkit and tested with fifteen young adults with Down syndrome. Participants consistently achieved more independently than their teachers expected, one finished without asking for help, others who finished early began helping classmates. Every participant wanted to show their finished print to someone, revealing how strongly pride of authorship is felt and shared. The project delivers both a working kit, 38 tested design guidelines and suggestions for framework adaptations for the specific demographic, giving other designers the tools to build many more kits like this one.

What this means

The maker world is not inherently inaccessible to people with Down syndrome. What made it inaccessible is that its tools and instructions assume a neurotypical user. The usual response is to manage the individual by simplifying, supervising and compensating. This project suggests a different one: fix the design.



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Democratising design for Down syndrome
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Integrated Product Design

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