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Remote co-development of a design education toolkit for children in rural Kenya

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Design and maker workshops are gaining prominence as a format for technology education. Specific cultural and socio-geographic conditions require adjustments to such education (Lemon et al. 2020; Axel, 2020; Kaui, 2018). In a project commissioned by the Kenyan nongovernmental organisation Sustainable Rural Initiatives (SRI), a starter kit has been developed to help elementary school-age children in the rural Okana community develop design skills in a playful way. The design toolkit has been developed remotely from the Netherlands during the 2020/2021Covid pandemic, in dialogue with a local community worker.

As the Dutch designer was unable to test the workshops on location, he had to gain an understanding of the local context remotely, relying on long-distance communication with limited and intermittent connectivity. As a result, much of his effort was focused on preparing digital materials that instructed and guided the SRI community worker in organising these workshops. The community worker shared the workshop process and results through photos and videos. After each activity, experiences were discussed in video conversations to feed the iterative process of redesigning the toolkit.

The original goal of this project was to let children make their own toys that would be sustainable, affordable, and accessible to them. Making their own toys would allow the children to better reflect their culture, environment and community values in their own designs (Else 2009, pp. 44-45). As the project progressed, the emphasis shifted from the end result (the toys) to the playful learning process (Zosh, 2017) of making toys from locally available free materials, such as twigs and clay.

The resulting toolkit consists of concise visual/written instruction sheets for the workshop host and supporting videos for participants, based on design skill didactics (Klapwijk & van den Burg, 2019). A culture-sensitive design approach (van Boeijen & Zijlstra, 2020) is key. A variety of aspects was considered, including the topics for the design challenges (a.o. means of transport, homes, and bridges), design terms (language and jargon), and language & music in the videos.

The first workshops are clearly pre-formatted, such that a community worker can become acquainted with the proposed didactics and become self-reliant to carry out subsequent - more open - assignments. Each workshop introduces a design challenge in three stages: Explore, Prototype, and Present. The videos include questions that provoke discussion between the children. Each child then builds a scale model in which their ideal solution is elaborated. The children present their design to each other and thus discover and celebrate the great diversity of possible solutions.

The playful creation process, the diversity of outcomes and intermediate video conversations sufficed to keep the children motivated and engaged. Even though no specific participatory appraisal methods (Chamber, 1994; van Boeijen & Stappers, 2011) were used to enhance the acceptability of the design, the remote way of collaboration during the pandemic had a positive effect on the contribution of the local stakeholders; they co-developed the embedding of the educational kit in the user context unknown to the designer.

Keywords: design education, children, learning through play, rural communities, Covid-19, culture-sensitive design

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