Design and manufacturing of children's remote control for child viewing

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A B S T R A C T

This paper presents a child-centred product design development process to produce a customized fingerprint-activated remote control for children using additive manufacturing technology. The paper is centered on the idea of using children's input in a design process using the imagination of the child. The My Remote manages television viewing content for children, restricts inappropriate content, controls viewing time and helps maintain a safe distance from the television screen. A finger-shaped design inspired by children based on the fingerprint recognition and the action of pointing at the television was adopted which demonstrated a synergy of functional and aesthetic design. The design process considered 4D elements: such as interface design, navigation, mood lighting and sounds, and 3D representations using Solid Works showing various colour schemes. Prototype models were produced using SLA (Stereolithography) and FDM (fused deposit modelling) techniques, allowing for ergonomic testing and visualisation. The study found that including children's input allowed subtle adaptations in the design requirements of the children because they were able to ergonomically test the remote control. The research culminated in a prototype model finger-shaped design, which fulfilled the criteria that it had to be innovative, inspired and liked by children, be comfortable and demonstrate functional requirements.

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