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Bringing in the silent stakeholder: Engaging children in the design of applications for their use

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TREO Talk Paper

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Abstract

In response to the increasing unease regarding the negative and potentially harmful consequences of the excessive use of digital technologies, literature suggested a combination of approaches premised on the development of digital skills and parental mediation (Jiow et al., 2017; Kammerl & Wartberg, 2018; Pandia et al., 2019; Rodideal, 2020; Steinfeld, 2021). Additionally, several applications aimed at assisting users to calculate and, if necessary, reduce their daily screen time were developed. They were initially developed for adults, but there are now several options for children as well, while some screen time monitoring applications are already installed in digital devices such as cell phones. Regardless of the plethora of such applications, we still have a rather limited understanding of how to best design them. There is also little, yet steadily increasing, research on the factors that motivate continued use and technology acceptance (Parry et al., 2023; Roffarello & De Russis, 2022). Consequently, there is still a noteworthy knowledge gap regarding how effective applications for balancing technology usage should be developed (Parry et al., 2023), especially when it comes to children and adolescents.

Stemming from the firm belief that technology can be part of the solution, we suggest the development of a digital well-being application designed to assist children and young people to gain a better sense of the time they spend on digital devices and establish boundaries to avoid excessive screen time. However, rather than treating children and adolescents as passive users of this application, we advocate for actively involving them in the entire design and development process. Considering that children are the most crucial stakeholders in such an application, we trust that their participation in the design and development process will lead to higher acceptance of the technology and empower them to shape their own understanding of digital well-being. To that end, we offer an initial roadmap towards developing such an application which we aim to test within the context of the EU-funded Project Digymatex ("Establishing a Comprehensive Understanding and Taxonomy of Children's Digital Maturity", Grant agreement number 870578). This early roadmap is premised on the combination of Value Sensitive Design (VSD) principles and co-design methods.

VSD is an approach to information systems development and software engineering which articulates an interactional position for how values become implicated in technological design, embracing the design and development of new technologies and applications as a value-laden process (Davis & Nathan, 2015). Methodologically, it is centred around a tripartite, iterative process that incorporates conceptual, empirical, and technical inquiries (Friedman & Kahn, 2002, 2003). On the other hand, co-design is premised on the idea of empowering by actively engaging them in the design process. Co-design in particular is an approach to design and development practice that entails actively involving end-users, consumers, citizens, or other categories of identified key stakeholders in the process of design, applying a collaborative and participatory approach (B.-N.Sanders, 2002; Papoutsi et al., 2021). Particularly when it comes to children, a participatory, user-centric approach is recommended in the design and development of technology for

children, as an effective way to reduce the discrepancy between the system conceptual model, defined by adult designers, and the mental model of children users (Nesset & Large, 2004).

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