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## Identifying Stakeholders Of Children's Digital Maturity: Looking Beyond Digital Literacy

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# IDENTIFYING STAKEHOLDERS OF CHILDREN'S DIGITAL MATURITY: LOOKING BEYOND DIGITAL LITERACY

*TREO Paper*

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## Abstract

*This paper presents work in progress on the stakeholders influencing and influenced by children's and adolescents' digital maturity. We build on the premise that the relationship between digital technologies and children and adolescents is complex – neither positive nor negative by default. Digital maturity is a multi-dimensional concept that embraces this complexity, building on collaborative research work from multiple disciplines developed within the context of the DIGYMATEX research project. As part of this work, we draw on stakeholder analysis to consider 'who for' and 'who with' should appropriate interventions be designed and supported, and how this may inform the design of an online platform on digital maturity.*

*Keywords: Digital maturity, Stakeholders, Children, Adolescents.*

## 1 Introducing Children's Digital Maturity

The impact of digital technologies and Internet usage on children and adolescents has emerged as a broad research field, bringing together different disciplines, approaches, and methodologies. For a considerable period, research in this field has been disproportionately focused on the adverse effects of digital technology on children's cognitive development, mental and physical health, social skills, and school performance (Ricci et al., 2023). However, more recent findings provide a considerably more nuanced view (Vedechkina & Borgonovi, 2021), unveiling a long range of benefits and promoting a more multifaceted understanding of children and adolescents' relationship with digital information and communication technologies. In the last decade especially, multiple studies report on benefits such as the development of new skills, new ways to express and develop children's identity, improved learning processes, and new ways of connecting and communicating (Livingstone & Blum-Ross, 2017; Smahel et al., 2020; Vedechkina & Borgonovi, 2021). As the use of digital technologies by children and adolescents continuously evolves and intensifies (Livingstone & Blum-Ross, 2017) there is an increased need for more research, and new lenses under which the multiplex relationship between children/adolescents and digital technologies can be studied.

The DIGYMATEX Research Project<sup>1</sup> adopts a multidisciplinary approach to address this research opportunity and offers a new perspective, using the concept “digital maturity” (Laaber et al., 2023) to understand and analyze children and adolescents’ use of digital technologies. Digital maturity is a multi-dimensional concept, which describes a form of self-determined digital technology use. It consists of three key capacities: (1) the capacity to use digital technologies in an autonomous and self-determined way; (2) the capacity to master increasing digital challenges and solve problems; and (3) the capacity to interact adequately with others and to contribute to society. These capacities directly address the digital challenges for young people's positive individual and social development. Accordingly, digital maturity can be determined and assessed using a sum of measurable characteristics and metrics. Instead of the relatively narrow problem-focused approach, or the rather back-and-white risk versus benefit focus, digital maturity offers a novel view of young people's digital technology use, embracing it as a multifaceted relationship. It also entails studying the drivers and different levels of digital maturity, its manifestation(s) and its evolution over time. This approach enables designing targeted interventions to enhance it, but begs the questions ‘who for’ and ‘who with’. In this paper we draw on stakeholder analysis to address these questions and understand their implications.

## **2 Stakeholders of children's digital maturity**

Digital maturity to-date has been studied with reference to organizations (e.g., Aras & Büyüközkan, 2023; Sándor & Gubán, 2022) or countries. As the use of this multi-dimensional concept brought forward by DIGYMATEX with reference to children and adolescents is novel, the understanding and study of the intricate way in which young people interact with and are impacted by digital technology necessitates an appreciation of relevant stakeholders. Stakeholders in this context are defined as the individuals or entities that can influence or are influenced by children and adolescents’ digital maturity, understood with reference to its three main capacities. Their identification, analysis and mapping are challenging tasks of considerable significance. Appreciating stakeholder viewpoints and interests can provide valuable insights for designing targeted interventions as well as policies to enhance digital maturity. Such interventions may include devising meaningful and effective ways to engage with stakeholders, may lead to the identification of further stakeholders (Pouloudi et al., 2016) and provide input that may in turn expand the original scope of digital maturity, adding new dimensions and uncovering new lenses and novel approaches for studying and improving it. Interventions of particular interest to informing systems design and development concern thinking about engaging relevant parties in the design and development of information systems related to digital maturity and digital wellbeing, so that applications that enhance children/adolescents’ digital maturity are successfully embraced.

To identify relevant stakeholders, we combined an extensive literature review with brainstorming sessions that involved our project partners and the increasing pool of the stakeholders already identified. Key stakeholders of children and young people’s digital literacy have already been identified and studied (Erstad et al., 2020; Soyooof et al., 2024). We built on such earlier work and we considered more broadly the different actors in children and adolescents’ lives, those affecting/affected by the children and adolescents’ digital literacy and their access to and usage of digital technologies, as well as the parties that may be interested in and/or affected by the externalities of children’s digital maturity as a concept. We developed an extensive Stakeholder Identification Registry, mapping 112 relevant stakeholders, classified into three different levels (micro, meso, macro) and nine spheres or categories: family and leisure; education; mental and physical health; ICT industry; civil society (including e.g., children's rights NGOs); research community; international and intergovernmental organizations; State/Government; and media (traditional and social media).

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<sup>1</sup> Establishing a Comprehensive Understanding and Taxonomy of Children's Digital Maturity, European Union Horizon 2020 Research and Innovation Programme, Grant agreement No 870578 (<https://digymatex.eu/>).

### **3 Key observations and next steps**

Our broad and inclusive scope in stakeholder identification, combined with the three key capacities underpinning children/adolescents' digital maturity, have brought new stakeholders to the forefront. The focus on autonomous and self-determined ways of using digital technologies, problem-solving and challenges evasion, along with the emphasis on social skills and interactions has led us to identify and list stakeholders that are not commonly considered when studying the relationship of children/adolescents with digital technologies. For example, our mapping includes stakeholders that relate to the cognitive and psychosocial development of the children, such as the school psychologists, their peers, and their broader social circle. It has also shed light on the actors who influence and/or contribute to the development of individuality and identity; their sense of independence, autonomy, and self-determination; and ultimately to their technological emancipation. Above all, it has emphatically highlighted the role of children/adolescents in enhancing their own digital maturity, empowered by a sum of peers and supporting actors that allow them to define their relationship with technology based on their own needs and motives, and informed, conscious choices. Accordingly, we have run workshops engaging children and adolescents in the design of digital well-being apps, expecting that this engagement will be instrumental in ensuring that children and adolescents will embrace solutions that contribute to their digital maturity that have been developed by their peers.

Based on these findings, our research team will now engage in collecting end-user requirements for the development of a platform on digital maturity, which is aimed at informing the stakeholders about this new concept, while collecting insights from them to further explore its conceptual content and dimensions. The platform is also intended to be used as a venue for co-designing meaningful and effective interventions for improving children/adolescents' digital maturity with the active engagement of all the involved stakeholders. To do so, we plan to hold workshops with representatives of different stakeholder groups and appreciate how their perspectives, interactions and values can provide input and insights for the development of information systems that may have a broader societal impact. We also anticipate that this work will enrich the research agenda on what constitutes ethical interventions when children and adolescents' digital presence and behavior is at stake.

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