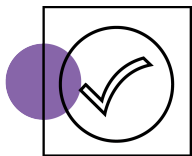


# Realising children's rights in the digital age: The role of digital skills

## Principle 4: Age appropriate

Develop policies and products that are age appropriate by design and consider using age assurance.



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Age-appropriate products and services depend on children's developmental milestones and life circumstances. Innovators and policy makers must consider the role of parents and caregivers, states and businesses in realising children's rights to provision, participation and protection in accordance with the child's evolving capacities and the gradual acquisition of autonomy.

This principle draws together three central issues in children's rights:<sup>1</sup>

- The concept of the child's evolving capacities recognises the gradual process through which children acquire greater competencies and understanding, along with the necessary transfer of responsibility for decision making from the parents or caregivers to the child.
- The obligations of the state include providing support and guidance to parents and caregivers so that they can protect their child's rights. In a digital world, parental responsibilities include mediating the use and impact of technologies, and the state – and businesses – play a key role in supporting this.
- When considering the use of age-assurance or age-gating mechanisms, policy makers and product developers must ensure these do not have adverse unintended uses and protect children's privacy and other rights.

**“We have an illusion, it seems, that young people are born with a mobile phone in their hands these days and that they automatically possess all the skills needed to handle it, but it is like you are giving a Ferrari to a five-year-old and saying: go ahead and drive.” (labour market expert, Finland) (12)**

The relationship between digital skills and the principle of an age-appropriate digital environment is easy to discern – as part of children's development we expect them to gradually expand their competence and acquire skills in all areas, including digital skills and literacy. It is easy to envision an environment that fosters such positive development and learning, and allows this to occur at a pace that accommodates the changing needs and capacities of each child. For example, in the UK the [Age Appropriate Design Code \(2020\)](#) identifies 15 standards for services which process personal data and are likely to be accessed by children

<sup>1</sup> [UNCRC](#), Articles 5, 18.

and takes into account differing ages, capacities and development needs ([Information Commissioner's Office, 2023](#)).

In practice, however, this remains hard to achieve in a context where providers do not always know when users are children, and children themselves are diverse and develop at different paces ([Livingstone, 2014](#)). The findings from the ySKILLS project show, loudly and clearly, that there are further complications arising specifically from the development of digital skills.

The ySKILLS systematic review of the literature reveals that **most of children's digital skills improve with age** ([14](#)). Out of 26 reviewed studies focused on this topic, 22 find a positive relation between age and digital skills. The secondary analysis of the EU Kids Online data showed that older children are more likely to use the internet for information, communication and entertainment ([9](#)). This means that provided with the necessary opportunities, children will gradually learn digital skills over time. We have already discussed how existing inequalities might prevent some children from having such opportunities. In addition, the findings show that **not all skills improve with age, suggesting that the development of some skills needs additional scaffolding**. The ySKILLS three-wave longitudinal research shows a positive relationship between age and the four digital skills dimensions: technical and operational, information navigation and processing, communication and interaction. The survey also found improvement of children's knowledge ([18](#)). While **age contributes to the development of most skills, specialised digital skills such as programming or content creation do not develop at the same pace as children get older**. This demonstrates the need for a learning environment that facilitates the acquisition of the full spectrum of digital skills at different ages, and the need for targeted efforts in areas where some children might fall behind.

Children develop skills when their circumstances present them with opportunities to learn – this is demonstrated by the ySKILLS qualitative case studies. They show that **children develop specific skills to manage the circumstances that they encounter and sometimes they learn in risky situations**. The research with young refugees shows that they develop digital skills through a process of learning by doing, which is linked to the crucial role of digital connectivity in addressing their numerous needs ([3](#)). Many refugee children manage to develop high levels of digital skills, particularly in communication and information, which are particularly useful to their lives in a new country ([3](#)). Similarly, the research with children and young people with mental health difficulties ([17](#)) shows that they develop skills that help them to manage better the effects of their digital engagement on their wellbeing. For example, they learn to trick algorithms into suggesting more positive content, to avoid unhelpful spaces or triggering content, and to find peer support and helpful information online ([17](#)). Generally speaking, **older adolescents among vulnerable groups have developed more digital skills**, primarily as a result of the many opportunities they have had to access and use digital media in the past and present, and to learn from more experienced peers ([3](#)).

Our findings show that these **skills develop in environments that enable their learning, especially if it concerns specialised skills**. Research on digital skills practices in non-formal learning settings ([7](#)) shows that, **if not specifically targeted, learning opportunities are missed**. For example, non-formal learning workshops are attended mostly by primary school children (7- to 11-year-olds), because of the activities offered (e.g., basic programming with Scratch) and because the children's participation is encouraged by their parents. Unless targeted specifically at an older age group, these opportunities to develop specialised skills are missed by older children and young people. This example also speaks to the **crucial role of parental encouragement of age-appropriate activities**.

Parents themselves might need information, support and guidance as **parental mediation may work against children's digital skills development**. The ySKILLS systematic evidence review showed that when parents practise restrictive mediation, this is linked to lower digital skills for their children, while enabling mediation is generally linked to better digital skills, although some studies found no relationship ([14](#)). More nuanced findings are offered by the three-wave survey, which shows that **an increase in restrictive mediation causes a decrease in technical and operational skills** ([18](#)). This shows that when parents limit the time children spend on the internet and the activities they do online, their children's ability to develop digital skills over time is affected. Understanding what facilitates the development of skills is somewhat

more complex as, **perhaps surprisingly, the positive influence of active parental mediation on children's digital skills was small** (19). Also surprisingly, enabling parental mediation did not have a helpful effect in relation to technical and operational skills – these were negatively related to both parental restrictive and enabling mediation (18).

While parents might be best positioned to make decisions about what is age appropriate to their child, **there is a constant need to guide parents in their mediation practices**. Parents need information and support regarding the best situated approaches and tools (Stoilova et al., 2023a), as well as the long-term effects of their (mostly restrictive) practices on children's skills and literacy, which can sometimes go against what was originally intended or desired by the parents. **Such guidance needs to be based on robust research evidence as to what is beneficial for children's development** in the light of existing concerns that the digital tools for parental control or age verification might not fulfil parental expectations for children's safety, and cause unintended loss of online opportunities and digital skills (Stoilova et al., 2023a). The voices of children in such research are paramount, and **ethical guidelines and practices also need to consider children's evolving capacities with regard to age limits when it comes to the requirement of parental consent for participation in research**.

#### Additional data

EU Kids Online findings for 9- to 16-year-olds in 19 countries showed that:

- Parents have a key role in deciding what is age appropriate for their child. One in three children said their parents 'often' talked to them about their internet use, while another third said this happened 'sometimes', and the last third said their parents 'never or hardly ever' talked about this. Girls and younger children were more likely to say their parents talked to them about going online.
- Two-thirds of children received guidance on internet safety from parents, although fewer (still, over half of children) said their parents encouraged them to explore and learn things online; two-thirds also said their parents helped them when something bothered them online.
- Reported use of parental control technology is lower – one in five children said their parents used these to block or filter some types of content – more younger than older children, with no clear gender differences.
- Parents' views about their child's age of digital independence varied substantially across countries, with parents more relaxed about their child making their own decisions online in some countries than others.
- Parents' views on the usefulness of control tools also varied. Many did not understand why this was necessary (between 14% and 47% in the different countries), would find it difficult to decide what to be permitted (35% to 50%), or did not feel that this would make much of a difference to how the child used apps or online services (39% to 63%).