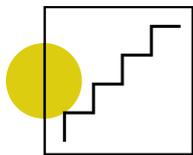


Realising children's rights in the digital age: The role of digital skills

Principle 10: Development

Enable children's learning, free play, sociability and belonging, and their fullest development.



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While the digital environment provides children with opportunities for learning and social, cultural, recreational and playful activities, child development requires resources and designs that offer creative outlets to encourage imagination, educational opportunities of all kinds, resources that recognise and celebrate cultural and linguistic diversity, and an enabling environment for children to thrive in, belong to and pursue the opportunities they choose.

The principle of development draws together three sets of children's rights:¹

- Education: making education (formal, non-formal and informal) accessible and affordable to children of all ages and circumstances to enable learning and, more ambitiously, children's fullest development.
- Culture: enabling children to enjoy their own cultures and that of others and allowing children to 'profess or practise' their religion and speak their native language.
- Play, leisure and artistic activities: the right to play, recreational activities and rest.

While adults have the power to provide these opportunities, too often these are insufficient, inappropriate or restricted from children's points of view. Society is often ambivalent about the role of digital technologies in children's development, being unclear which digital activities bring benefits or harms. Public, private and third sector actors all have a crucial role to play in building a digital world in which children can fully develop.

**“In Mali I did not have a mobile phone. I left Mali and went to Gabon, where I got a cell phone and it helped me a lot to be able to communicate in French, I watched videos to learn French and English, on YouTube and Google Translate.”
(Mali teenager, UK) (26)**

¹ [UNCRC](#), Articles 6, 28, 29, 30, 31.

The level of skill achievement relies, in fact, on the children themselves, whether they engage with all this digital stuff in their private lives and whether they are interested in it.” (education expert, Finland) (12)

Under the principle of development, we have grouped a number of key outcomes for children that centrally concern their rights. These concern the right to education (UNCRC, Article 28) which, in the present context, includes both the right to education about the digital environment (i.e., digital skills as a valuable outcome in their own right) as well as gaining digital skills as a means to an end (i.e., by facilitating access to e-learning resources and other opportunities to learn). Children’s fullest development (UNCRC, Articles 6, 29) is also linked to children’s cultural, creative and recreational rights (UNCRC, Articles 30, 31). So, does gaining digital skills enable children to better realise these rights?

Many of the ySKILLS longitudinal survey findings across six European countries help answer this question. Moreover, they add clarity to prior research by distinguishing particular outcomes related to the different dimensions of digital skills. For instance, **content creation and production skills were positively predicted by number of daily online activities and higher internet use (18)**. Further, higher engagement online positively impacted the information navigation and processing skills, and communication and interaction skills (18). Indeed, ySKILLS results **generally confirm that children who engage in more online activities seemed to develop more digital skills and literacy (19)**.

While **multiple dimensions of digital skills are important, they develop unevenly, and they have differential outcomes**. The ySKILLS evidence review found that, while gaining technical skills was linked with mixed or even negative outcomes, information skills were linked with positive outcomes (16). The three-wave longitudinal study confirmed that higher content creation and production skills increased the creation and editing of digital content (18). However, the multiple dimensions of digital skills are not all equally valued. Although they pay less attention to creation and participation, experts generally underline that **there is a need to go beyond operational skills into more social digital skills and the role of digital skills as ‘life skills.’** Further, labour market experts emphasised the close connection between digital and non-digital skills, arguing for their integration into a broader concept of skills (12). For instance, **retrieving and assessing the quality and veracity of information are considered as important skills to acquire (13) and arguably, they require both digital and other (critical, interpretative) skills**.

Children with positive attitudes towards ICT have higher digital skills (14) and relatedly, research finds a positive association between digital skills and online opportunities, information benefits and orientation to technology (16). This suggests that **children and young people need appropriate and meaningful external support, individual effort and motivation to become digitally skilled (7)**. This may occur in formal, non-formal or informal learning (Sefton-Green, 2012). **When ICT is more available in schools, children’s digital skills tend to be better (14)**, and teachers can play a key role as change agents in stimulating children’s digital skills (5). Teachers need support therefore to develop up-to-date skills to support children’s right to education. Also, **those with earlier or broader access to ICT, including at home, have better digital skills (14)**. The home–school link is often underdeveloped, with more teachers than parents facilitating the development of children’s digital skills in ways that can support this link, connecting sites of learning productively (5).

As for non-formal learning, ySKILLS qualitative research suggests that workshops should allow a certain degree of open-endedness and freedom, so that children and young people can adjust and embed the projects into their own lived experiences and future-oriented imaginaries (7). Across these different settings, a child-centred teaching style could be far more engaging and more likely to keep children motivated in the long run (8). Tellingly, **when it comes to informal learning, children and young people often say they gain digital skills by trying things out:** young refugees acquire various digital skills through learning by doing, for instance, and this is linked to the crucial role of digital connectivity in tackling their numerous needs (3). The children and young people with mental health difficulties were also eloquent about learning by doing, and just-in-time learning, rather than the skills they were taught by teachers or parents (17).

There is considerable public anxiety that online activities undermine children’s development. However, the fMRI research found **children who played more online games performed better on some linguistic tasks**, while their digital activities were unrelated to their performance on mathematical tasks (1). **Young action video gamers were also better than non-gamers at tasks demanding visual attention, visual working memory, tracking of multiple visual objects or switching between two visual tasks** (2). Moreover, training in a visual matching game or hidden object game resulted in improved visual search performance and visuo-spatial working memory, and training in a hidden object game improved verbal working memory (2). On the other hand, when specific skill dimensions were examined, it appeared that participants who scored higher on communication and interaction skills and content creation and production skills, scored worse for their semantic classification performance during distracted reading, non-distracted reading and non-distracted listening (1). Attention skills were also negatively related to the frequency of children’s online activities and sharing in social media (1). Put the other way around, **children with higher working memory had lower communication and interaction skills as well as content creation and production skills** (1).

There is some evidence that **greater digital skills are linked to better learning outcomes for children, although the evidence base for this is small** (and further research is needed) (14). The systematic evidence review found that the higher a child’s academic achievement, the better their digital skills (14). This was confirmed by the ySKILLS longitudinal survey, where **increases in communication and interaction skills led to a subsequent increase in self-reported academic performance** (18).

Participants in the qualitative ySKILLS study generally had a good awareness of the presence of mis- and disinformation on the internet and of the importance of credibility evaluation skills to build resilience and to avoid being misled by such falsehoods (24). A large proportion of children reported their technical and operational skills as well as their communication and interaction skills at a high level, while they perceived their information navigation and processing skills and their content creation and production skills to be the lowest (24). Further, **self-reported technical and operational skills, as well as communication and interaction skills, were far higher than information navigation and processing skills as well as content creation and production skills** (24). However, the ySKILLS performance tests revealed some concerning gaps in children’s digital skills. Notably, **they cannot always distinguish between reliable and unreliable information sources** because their information evaluation skills are lacking.

The most significant variables that account for higher levels of digital skills were parental mediation, age, gender, time spent online, preference for online social interaction, self-efficacy and personal attitudes towards the internet (20). Restrictive parental mediation negatively predicts skills in in most countries, although regrettably the active mediation results were too weak to derive clear conclusions as to the value of active mediation.

Additional data

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

- Using the internet daily for schoolwork ranged between 16% (Poland) and 46% (Lithuania), with considerable age differences and few gender differences (although more girls than boys in some countries).
- A number of children played online games every day, ranging from between 27% (Slovakia) and 71% (Lithuania) – more boys than girls did this.
- Children’s self-reported digital skills increased with age and varied little by gender. While most children scored high on the operational and social skills scales, a significant proportion lacked information navigation and processing and content creation and production skills.