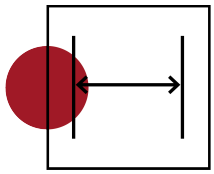
Realising children's rights in the digital age: The role of digital skills

Principle 1: Equity and diversity

Be inclusive, treat everyone fairly and provide for diverse needs and circumstances.



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Equity and diversity in relation to the digital environment means that all children, regardless of their characteristics and circumstances, are treated fairly and have equal access to digital products and services, and the opportunity to use them in ways they find meaningful.

The principle of equity and diversity draws together three sets of children's rights:[1]

- Non-discrimination: the right to be treated fairly and not discriminated against.
- Family provision and alternative care: to ensure that parents and caregivers are supported, and that children living in alternative care do not miss out.
- Special protective measures: to make explicit provisions for children with disabilities or those living in disadvantaged, marginalised or vulnerable situations, and empower parents and caregivers to support their children.

Respecting the principle of equity and diversity does not mean that all children should be treated just the same, or that businesses cannot tailor their products to specific user groups. But policy makers and innovators should prioritise fairness by recognising and addressing the diverse needs and expectations of the children likely to use or be impacted by digital products and services and taking active steps to avoid or overcome potential forms of exclusion or discrimination.

"If I don't have a phone, I have nothing." (Afghani teenager, Greece) (26)

"Not everyone has the equipment, internet access, appropriate learning conditions." (policy maker, Poland) (5)

In much of this report, we ask whether ySKILLS evidence shows convincingly that gaining digital skills and literacy enables children to better realise their rights in a digital world. However, following ySKILLS' conceptual framework that distinguishes not only the consequences of gaining skills but also the antecedents of skills development, we begin by recognising that children are unequally positioned in society, and this matters for their digital literacy and, more broadly, the exercise of their rights. The articles

[1] UNCRC, Articles 2, 9, 10, 18, 20–23, 25, 30, 37–38, 40.

brought together under this first principle of equity and diversity encompass a wide array of circumstances of vulnerability and disadvantage, some of which were explicitly addressed by the design of ySKILLS research. There are three groups of factors identified in the survey data that create grounds for vulnerability: socioeconomic disparities, mental and/or physical health disparities, and academic disparities (d'Haenens et al., 2023).

In short, in ensuring children's right to be treated fairly and not to be discriminated against in a digital world, it is vital to consider the many and diverse forms of disadvantage or marginality that characterise children's lives. Too often, digital skills and literacy policy and initiatives imagine a 'typical' or 'generic' child, failing to provide the particular and necessary supports to ensure that all children benefit not only from equality of opportunity but also equity in outcomes. This is not to say that all children should be steered towards the same outcomes – diversity in culture, context and heritage matters and must be respected – but differences should not become sources of disadvantage, and prior inequalities should not be perpetuated or exacerbated by digital literacy initiatives.

Children and young people encounter many barriers to gaining digital literacy, whether precarious lives, interrupted educational experiences or social exclusion (3). These matter both to individuals and to society. Labour market experts underlined a concern about digital inequalities in shaping future labour opportunities, and they call for attention to overcoming such inequalities as a priority action (12). The ySKILLS systematic evidence review found that **children from higher SES households have greater digital skills** (14). One reason is that when parents have poor digital skills themselves, and do not fully understand what skills their children should have or need, in such circumstances, they may not be able to contribute to the school–home dialogue on what skills should be taught or developed (4). Indeed, **the factors inhibiting school–home communication are strong predictors of digital inequalities** – experts consulted by ySKILLS reported that young people who are most disadvantaged offline because of lower SES or migration are also more disadvantaged online (5).

Non-formal learning initiatives designed precisely to overcome such disadvantages can end up perpetuating them. Coding and robotics workshops delivered by the ySKILLS researchers found that, unless initiatives are specifically tailored for underrepresented groups (including girls, adolescents from lower SES households and those from minority ethnic groups), digital skills workshops held in public libraries, youth clubs and **extra-curricular school activities were mainly attended by upper- or middle-class boys** (7). **To counter inequalities**, **highly targeted** rather than generic ('open door') **digital literacy interventions are required** (8). These efforts must attend to outreach, curriculum design and the informal discourse in non-formal learning settings. During the workshops, ySKILLS researchers observed that the structure of the learning activities, the organisation of the learning environment and **the choices of children themselves all tend to promote individualistic practices where each child works on their own to achieve their personal goals** (8). Targeted interventions should include extra-curricular digital training designed to suit children's interests, and literacy programmes tailored to the needs of vulnerable students, as those programmes that increase students' receptivity to acquiring digital skills are most successful in closing digital divides (21). Such digital skills and literacy initiatives could and should become embedded in the social fabric of the urban environment where children and young people live (7).

Broadly speaking, the ySKILLS systematic review of the literature reveals that, while **children's digital skills improve with age** (14), multiple factors introduce inequalities in the process. This is often measured as a loss of self-efficacy linked to poorer digital skills among children from minority or disadvantaged groups (19). Conversely, improved self-efficacy showed a subsequent positive effect on children's technical and operational skills, information navigation and processing skills, communication and interaction skills, and content creation and production skills (18). Note, however, that self-efficacy rests on the quality of resourcing and support enjoyed by or denied to different groups in society.

The ySKILLS three-wave longitudinal study highlights that **gender is a major factor of difference and inequality**. Boys reported higher perceived technical and operational skills (including programming skills), and information navigation and processing skills, while girls reported higher perceived communication and interaction skills (18). In contradiction to the claims, **performance tests indicate no difference in digital skills between boys and girls** (14). However, claims can matter in themselves, indicating confidence and

motivation to learn – boys' greater claims regarding their digital skills, compared with girls, were larger among those children who felt discriminated against (20). Also interesting is that, since students of the same gender tend to be friends, and therefore ask advice of each other regarding digital technology (6), students' peer relations can consolidate both differences and inequalities in the development of digital skills. Interestingly, the ySKILLS survey found that non-binary youth's digital skills are closer to boys' than girls', although they report greater content creation skills than boys and girls (10).

The ySKILLS survey sought to better understand discrimination, and the extent to which children who report being discriminated against differ from their non-discriminated peers. Children who responded feeling discriminated against 'daily' or 'weekly' were coded as 'discriminated', whereas those who reported 'monthly' or 'never' were marked as 'non-discriminated'. There was a pattern that showed those who were discriminated against had better skills than those who were not, but these results were only statistically significant for programming and content and production skills (11).

The ySKILLS systematic evidence review found that ethnicity is examined by only a handful of studies as a potential source of digital inequality, and with mixed results (14). Secondary analysis of nationally representative survey data from 10,820 children suggests that doing more online, along with self-efficacy, are stronger predictors of digital skills than being part of a discriminated-against group (20). Indeed, there is evidence that young people from such groups may develop greater digital skills, especially programming and content creation (11). On the other hand, children from discriminated-against groups can benefit less from social uses of digital technologies, also gaining less improvement and self-efficacy in digital skills as they grow older, compared to their peers from majority groups (20). It might be concluded that, to overcome digital inequalities, supporting minority children and young people's online activities, especially social and creative activities with digitally skilled peers (6), could build their self-efficacy and, thereby, the digital literacy they need to exercise their rights in a digital world.

Efforts to model the relations among factors to understand digital inclusion suggest that **the online and offline disadvantages that girls and children with lower-level education face can be countered if efforts are made to improve their digital skills**. SES and age are independently associated with outcomes, but again, improving digital stills can mitigate inequalities (14). **The most pressing challenge for educators is to detect children who are at risk of being left behind regarding their digital skills and access to new technologies, and to cater appropriate services and support for them** (4). While structural barriers must be addressed by policy makers (see Ní Bhroin et al., 2023 and Chatzinikolaou et al., 2023), most crucially in relation to SES, gender and sources of discrimination, it is striking that online social interaction was a positive predictor of digital skills, suggesting that children who find it easier to express themselves online may actually benefit from this usage to develop skills relevant to the digital environment they feel more at ease in (19). Adult society tends to denigrate children's social media activities and yet, as evidenced by ySKILLS survey data, a positive association was found between digital skills and online opportunities, information benefits and orientation to technology (16). Encouraging children to learn for themselves can be powerful: supporting children's own interests, agency and participation as they take their first steps in gaining digital literacy might prove more beneficial in the long run than adult guidance, judgement or restriction, however well intentioned.

Additional data

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

- In many respects, children's experiences of the internet are similar by gender. However, of the one in six teenagers who reported receiving unwanted sexual requests online, more girls than boys said this. Similarly, while most teens across the 19 countries (61%) had seen sexual images online, considerably more girls (51%) than boys (26%) reported being upset by what they saw.

- Further analyses of the EU Kids Online survey data show that (perceived) individual and social discrimination affect the relationships of socio-cultural resources (age, gender, preference for online social interaction) and personal resources (self-efficacy) with digital skills (see Mascheroni et al., 2022)