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Towards a child-centred digital equality framework

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Key messages

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- Notions of digital inclusion have changed over time, from the digital divide between those who could access the internet and those who could not, to a broader focus on digital inclusion that covers issues such as digital skills, content and safety.

- While this evolution is positive in digital inclusion frameworks and has shown significant results, often more attention was paid to general diffusion and uptake of digital technologies (e.g. how many children are connected, trained, and devices distributed), than their use and outcomes (e.g. improvements in learning or development) and the role of children's contexts in shaping these.

- The digitization of society does not have a universal effect on all children. Digital exclusion reflects and amplifies existing social, cultural and economic inequalities. Children's environments influence to what extent those from different contexts can seize digital opportunities and avoid risks.

- To be future-ready, a child-centred digital framework needs to transition from 'inclusion' in technological terms to 'equality' in developmental and well-being outcomes. The framework presented here shows that to get the most out of digital access, skills and content, inequalities in the lives of children need to be addressed.

- A framework for an equitable digital future also needs to consider the changing digital and governance landscapes – such as emerging and embedded technologies – and their impact on children's digital experiences.

- A broader range of stakeholders, from global digital standards bodies, national policymakers, large digital companies, to community centres, parents and children, need to be involved in holistically addressing digital inequalities, recognising that sometimes solutions to inequalities in digital societies are not digital.

Why do we need a new framework for inclusive and equal digitization?

"Digital inclusion should aim to dismantle existing structural social inequalities and enhance well-being for all."

UN Office of the Secretary-General's Envoy on Technology[1]

From a few million users in 1992, almost 5 billion people are now online.[2] It is estimated that 71 per cent of all youth (15-to-24 year olds) use the internet, making them the most connected age group. Efforts to connect, upskill and protect children and youth online – by many governments, international and non-profit organizations (including UNICEF) and private sector stakeholders – have been critical to children's development in a digital age. These efforts have shown results and cannot be allowed to lapse. The endeavours that have informed policy and practice are based on digitization frameworks that reflect an evolution in thinking: from primarily connecting people, to a more expansive approach to digital inclusion aimed at increasing skills and providing relevant content. Yet significant disparities in accessing and using the internet amongst children remain. Lessons learned from digitization efforts to date, and a changing digital and governance landscape, provide some clues as to why.

Today, we know that a more holistic approach – one that addresses inequalities – is needed in digitization frameworks and policies. Digital inequalities among children from different backgrounds are systematic, consistent and persistent and are based on factors such as their socioeconomic status, influence of their culture, and levels of well-being. Even with the same internet access, digital literacy and content, children from different places and backgrounds can still have unequal experiences and outcomes from digitization. Unaddressed injustices and inequities based on sexism, racism, classism and other forms of discrimination, contribute to this.

KEY CONCEPTS

Digital inclusion refers to a child's opportunity and ability to engage with digital systems (or choose not to engage with them) in ways that allow them to obtain beneficial outcomes across all domains of everyday life and avoid negative outcomes for themselves and others now and in the future.

Digital equality refers to a situation in which a child's digital inclusion is not dependent on where they are from or what their background is, where the inequalities in their life are addressed so that they can seize digital opportunities and avoid risks.

A **digital framework** is a foundational structure and planning tool that informs policies and programmes which aim to bring about digital inclusion and equity.

Technological advances can further impact inequalities in the everyday life of a child, for better or for worse. For example, artificial intelligence (AI) systems are fundamentally affecting present and future generations of children through content and social recommendations, adaptive learning software, and automated decision-making, largely happening in the background of digital engagement.[3] Children will increasingly engage with connected technologies embedded in everyday objects and environments rather than through devices such as computers and phones. Increased digitization means that children today are the very first generation whose lives are being datafied from before birth and then tracked throughout childhood.[4] This is happening even while most national data regimes don't adequately protect children's rights.[5] More broadly, emerging technologies and trends risk aggravating existing inequalities[6] because of uneven regional and local opportunities to maximize benefits and mitigate risks.

This is why, in a world of digital interdependence, we need cooperation at the global level to create equitable governance regimes which, while seemingly far removed from children's day-to-day interaction with technology, can have profound impacts on their well-being and rights. These regimes can ultimately impact issues such as "privacy, human agency and security in order to achieve inclusive and equitable outcomes".[7] These dynamics are largely not reflected in current digital inclusion frameworks, prompting a fresh look at how to continue to adapt for the future, and a shift in focus from digital inclusion to digital equality.

Scope of the framework

Given a deepening in our understanding of how digitization happens, of what works and where gaps remain, and a changing digital world, we have worked with researchers from the London School of Economics and Political Science to develop a child-centred digital equality framework. Below we start by considering the evolution of frameworks that have been used to inform digital inclusion policies, accomplishments and lessons learned, and then describe the proposed framework and identify key stakeholders that need to be involved. The framework is released as a precursor to a forthcoming report in which it will be used to review whether and how key digital policies and strategies by governments and international agencies attempt to increase digital inclusion for children. The report will contain promising practices from suggestions made here, and policy recommendations for UNICEF, governments and industry to achieve greater digital equality.

Changing approaches to digital inclusion

Considering how notions of digital inclusion have changed over time helps to inform frameworks that can work today and be more future-ready. Below is a snapshot of previous and current approaches, and a look to the future.

The past: Digital divide

Online access is a necessary step but, on its own, is an insufficient condition for the alleviation of digital inequalities.

Focus: The digital 'haves' and the 'have nots'. The included child was connected, the excluded child was not.

Application of the framework: Policies and programmes aimed at improving digital infrastructure and providing (cheaper) access to the internet for children, their homes and schools, thereby bridging the gap between those who could access the internet and those who could not.

Achievements and lessons learned: These policies and programmes were a logical and appropriate first step that led to significant numbers of children gaining access to the internet, as well as facilities such as libraries and schools being equipped with computers. However, the approach was not enough since online access is necessary but, on its own, is an insufficient condition for the alleviation of digital inequalities.[8]

A key lesson learned from this approach was that a focus on access alone ignores large regional and local differences in:

- Children's *ability* to use digital technologies extensively and in constructive ways.
- The *motivation* to use and perceptions of the benefits of digital technologies for children.
- People's understanding of the *risks* that the use of or interaction with digital technologies might bring for children.
- The amount of relevant *content* for children from different backgrounds and speaking different languages.
- The influence of factors such as children's race, ethnicity, class, sex, gender identity, (dis)ability, and cultural context on their digital inclusion.

The present: Digital inclusion

Focus: Shift from internet access divides to greater levels of inclusion for children across a range of digital aspects.

Application of the framework: Incorporation of digital skills in school curricula; awareness campaigns around the opportunities that technologies bring; safe use of digital technologies in order to increase children's motivation and self-confidence in use; and commissioning of relevant learning content (especially important during the COVID-19 pandemic). This is done in addition to existing policies and programmes that continue to promote connectivity for schools, homes and communities. In parallel, there is an increased focus on digital safety, including in the development of child online protection policies and regulations aiming for more child-appropriate online content and experiences.

Achievements and lessons learned: The present approach certainly shows a maturing in thinking and is a significant step in the right direction, incorporating digital skills training, curriculum development, awareness campaigns and online learning content for children, as well as regulation of the digital space to make it safer for children. This approach has led to a great many digital opportunities for children around the world. However, the current frameworks still do not sufficiently address inequalities in relation to the differential impact of digitization on well-being and developmental outcomes.[9,10]

Digital inclusion policies should also anticipate impacts of emerging and embedded technologies.

Digital inclusion policies can further:

- Focus on the kinds of *developmental and collaborative skills* needed for web 2.0 (a more participatory, social and creative environment) in addition to functional and technical skills that mainly relate to consumptive and individualistic use of technology.
- Aim to increase children's active participation in the *creation of digital content*, and improve the availability and use of content and services.
- *Measure the improvement of vulnerable children's lives* and the alleviation of inequalities in a broad range of potential developmental outcomes from digitization covering education, culture, well-being and resilience, while aiming to reduce inequalities in the digital opportunities offered (e.g. access, skills, and content).
- Consider a *broader ecosystem of stakeholders* that includes others in children's lives – such as friends, parents, caregivers and community leaders, all the way up to global actors. In short, all those who influence engagement with digital environments in some way.
- Be cognizant of the anticipated *impacts of emerging and embedded technologies*, and include strategies to leverage positive outcomes and mitigate negative ones.
- Prioritize children as a distinct user group at *national, regional and global levels of digital governance*, so that their rights are at the centre of policies, as well as meaningfully engage children in the policy development process.

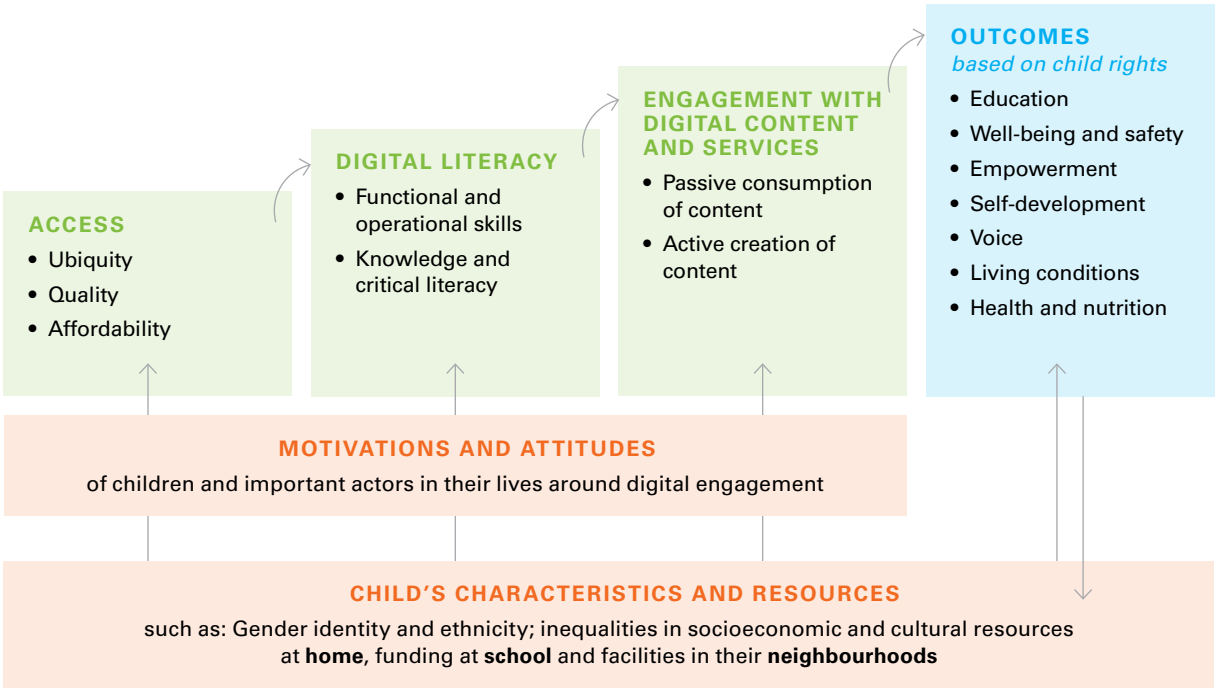
The approaches of yesterday and today were appropriate for their times, but new approaches are now needed for an evolving digital landscape.

A child-centred framework for an equitable digital future

A framework that aims to create a more equitable digital future for all children needs to take into consideration all aspects of digital inclusion, address known gaps, explicitly aim to achieve digital equality, involve a broader range of stakeholders to do this, and respond to emerging technologies and trends. It also needs to show that digital equality is sequential and cumulative:[11] the more resources a child and their environment have, the better their access is likely to be; the better the access, the more opportunities they have to develop digital literacy; the higher the digital literacy, the broader their digital engagement is likely to be; and the broader the engagement, the more likely that a wide range of outcomes is achieved. Figure 1 illustrates these dynamics.

FIGURE 1: A CHILD-CENTRED DIGITAL EQUALITY FRAMEWORK

Policies that are sufficiently robust for an equitable digital future will incorporate all of these aspects



Access: The quality, ubiquity and affordability of meaningful access so that a child and relevant actors in their life can connect at high speeds, whenever and wherever they want to obtain the resources that they need. Taking an expanded view of access, this includes from the required infrastructure, a range of devices – such as mobile phones or laptops – and potentially through digital objects, such as digital toys or smart devices like voice assistants in the home.

Digital literacy: While the acquisition of digital skills of the functional and technical kind will continue to play a role, a focus on digital literacy should be the cornerstone of digital inclusion policies. Digital literacy should include collaboration skills, media literacy and the critical evaluation of content (which helps with navigating mis/disinformation),[12] data literacy, as well as an understanding of children's rights online, such as around data and privacy, and how to be safe online. In a digital future in which technologies are embedded in digital services and everyday environments, and not necessarily accessed through separate devices, knowing how to reflect critically about technology, its design and impacts, and how to shape it rather than use it, will be essential for children and those around them, such as their peers, parents or caregivers, and teachers.

Engagement with digital content and services: Making quality child-appropriate (age and language) content available needs to be explicitly mentioned in policies. In addition, policies should incorporate the idea of children as active participants and creators of content in digital environments, going beyond the provision of content for children to consume or learn from.

Policies should also focus on creating safe digital environments for all children, for example, working with stakeholders to stimulate positive interactions with others in these spaces, and regulating against grooming and commercialisation of childhood which will particularly affect vulnerable children.

Besides these fundamental aspects of digital inclusion, digital equality policies need to put more emphasis on constructive motivations and attitudes, on measuring outcomes from digitization, and on addressing inequalities related to a child's characteristics and resources.

Motivations and attitudes: Underlying these elements are the motivations of individual children to engage digitally, as well as the perceptions and norms of important actors in their lives around the benefits or risks that digital access, skills and engagement carry for particular children. For example, parents or teachers might think digital skills are more important for those likely to continue to higher education than for those who are more likely to take up manual, blue collar work. Or they may think that digital engagement is a good thing in general, but less relevant for girls than for boys, because of negative gender biases towards girls, or less important for those from a certain caste or social class. Supportive attitudes are crucial for all children to be able to equally participate in the digital environment.

Outcomes: Providing the above-mentioned support does not automatically mean that children take up the opportunities available online, nor that they avoid negative outcomes of the digitization of society. Therefore, policies should include key performance indicators in terms of how improvements in access, literacy, content and engagement with technologies contribute to equality in outcomes for children, such as in education, well-being and safety, empowerment, self-development, voice, living conditions and health and nutrition.

Child's characteristics and resources: In order to ensure greater digital equality for all children, the policies based on the framework need to include not just interventions that increase overall levels of digital inclusion in the different elements shown above, but also demonstrate an understanding of what causes inequalities in these levels. Policies need to be explicit in how they are going to target inequalities based on characteristics and resources historically associated with disadvantage and discrimination as identified in the human and child rights frameworks, which can be amplified or ameliorated through digitization.[13] At the level of the child, inequalities in access, digital literacy, engagement, motivations and outcomes can be influenced by a range of factors: their characteristics (e.g. race, ethnicity, class, sex, gender identity, disability, or status of physical and mental health); the resources available to them in their immediate environment at home (e.g. socioeconomic status and available social support networks); school (e.g. how well funded it is or its approach to children's learning); and their neighbourhoods (e.g. facilities, level of affluence or deprivation, safety and stability).

A broader multi-stakeholder approach to digital equality for all children

While most digital inclusion policies and strategies call for a multi-stakeholder approach, often key stakeholders are absent or not sufficiently engaged in policy development or implementation, especially children themselves. Which resources children have, and what the digital world looks like for them, is shaped by global, regional, national and local actors and forces. Below are key stakeholders that have influence in the sphere of digital inequalities and therefore should be included in policy implementation.

Global stakeholders: Including governments, global digital governance fora, standardization bodies, international organizations and multinational tech companies, which collectively develop or shape global digital inclusion policies, strategies and digital infrastructures and platforms.

Regional and national stakeholders: Including regional organizations, governments, non-profit organizations and companies that provide digital services to children or relevant people in their lives. Regional and national government policies and regulations inform the provision and availability of digital content, products and services, as adapted to the regional or national contexts.

Local stakeholders: Spanning a range of participants and contexts, including children. The child's lived environment incorporates important actors, socioeconomic and cultural influences, as well as physical and digital infrastructures. This environment is the most important in providing access and shaping children's digital behaviours and views of the digital world. Much learning about technology takes place informally and collectively through learning by doing and observation of others rather than formal training.[14,15] [16] Local stakeholders are in:

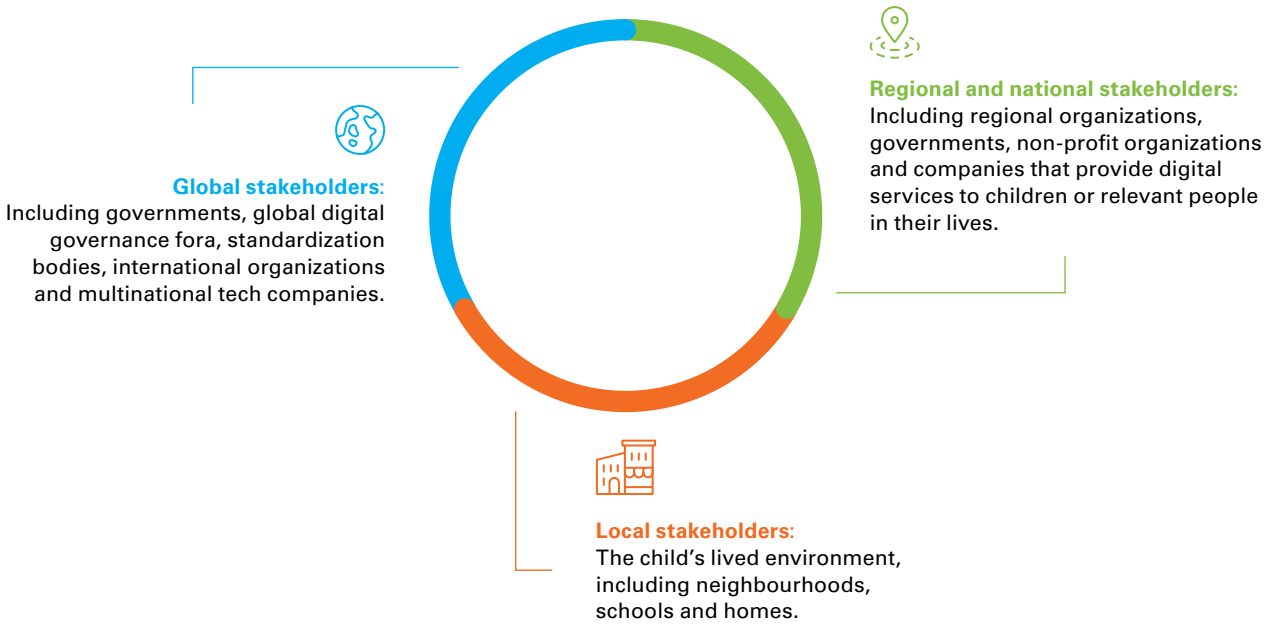
- *Neighbourhoods*: Including local organizations that interact with children, such as sports clubs, community centres, libraries, local councils, non-profit organizations, charities, religious centres, and professionals such as architects and designers of smart-city initiatives.

- *Schools*: Including teachers and principals/leaders. A child's school has a great influence on their access, ability to acquire skills (e.g. through the curriculum), the kinds of digital practices – the 'netiquette' – they are exposed to, and whether they achieve learning outcomes.

- *Homes:* Including parents, caregivers, siblings and friends. These are the most important stakeholders as the home is one of the main sites where inequalities express themselves in access, motivations and attitudes and digital skills acquisition.

FIGURE 2: FRAMEWORK OF STAKEHOLDERS

Policies should call on these stakeholders' involvement for a more equitable digital future



How to use this framework

The framework is intended to be used as a basis for designing and evaluating digital inclusion policies, whether they cover inclusion broadly or are policies more specific to, for example, improving access or digital learning. It can help to gauge how holistic a policy is and how it includes (or not) relevant stakeholders needed for achieving digital equality for children. Beyond analysis, the framework aims to be useful for drafting policies and interventions by government policymakers, international organizations and the private sector. As the digital landscape is dynamic, the framework should be seen as a living and adaptable document that can be updated according to shifting technologies and social and economic realities. We therefore invite you to use the framework in your efforts towards greater digital equality for children and to share your experiences and learnings openly.

Let us know **how you use the framework**, and share what you learn by emailing us at svosloo@unicef.org.

Endnotes

1 UN Office of the Secretary-General's Envoy on Technology, 'Digital Inclusion', 2022. https://www.un.org/techenvoy/sites/www.un.org.techenvoy/files/general/Definition_Digital-Inclusion.pdf

2 International Telecommunication Union, *Global Connectivity Report* 2022, May 2022. https://www.itu.int/itu-d/reports/statistics/global-connectivity-report-2022

3 UNICEF, 'Policy Guidance on AI for Children', 2021. https://www.unicef.org/globalinsight/media/2356/file/UNICEF-Global-Insight-policy-guidance-AI-children-2.0-2021.pdf

4 Barassi, V., 'Tech Companies Are Profiling Us from Before Birth', 14 January 2021. https://thereader.mitpress.mit.edu/tech-companies-are-profiling-us-from-before-birth

5 UNICEF, 'The Case for Better Governance of Children's Data: A Manifesto', 2021. https://www.unicef.org/globalinsight/media/1741/file/UNICEF%20Global%20Insight%20Data%20Governance%20Manifesto.pdf

6 Human Rights Council, 'Possible Impacts, Opportunities and Challenges of New and Emerging Digital Technologies with Regard to the Promotion and Protection of Human Rights': Report of the Human Rights Council Advisory Committee, 19 May 2021. https://undocs.org/A/HRC/47/52

7 UN Secretary-General's High-level Panel on Digital Cooperation, *The Age of Digital Interdependence,* 2019. https://www.un.org/en/pdfs/DigitalCooperation-report-for web.pdf

8 Van Dijk, J.A.G.M., *The Digital Divide*, Polity Press, 2020.

9 Scheerder, A.J., van Deursen, A.J.A.M. and van Dijk, J.A.G.M., 'Negative Outcomes of Internet Use: A qualitative analysis in the homes of families with different educational backgrounds'. *Information Society*, 35(5), 286–298, October 2019. https://doi.org/10.1080/01972243.2019.1649774

10 Van Deursen, A.J.A.M. and Helsper, E.J., 'Collateral Benefits of Internet Use: Explaining the diverse outcomes of engaging with the Internet'. *New Media & Society,* 20(7), 2333–2351, 2018. https://doi.org/10.1177/1461444817715282

11 Van Deursen, A.J.A.M., Helsper, E.J., Eynon, R. and Van Dijk, J.A.G.M. 'The Compoundness and Sequentiality of Digital Inequality. *International Journal of Communication* 11, 425–473, 2017. http://ijoc.org/index.php/ijoc/article/view/5739

12 UNICEF, 'Digital Misinformation / Disinformation and Children', 2021. https://www.unicef.org/globalinsight/media/2096/file/UNICEF-Global-Insight-Digital-Mis-Disinformation-and-Children-2021.pdf

13 Helsper, E.J., *The Digital Disconnect: The Social Causes and Consequences of Digital Inequalities*. Sage: London (UK), 2021.

14 Meyers, E.M., Erickson, I. and Small, R.V., 'Digital Literacy and Informal Learning Environments: An introduction. *Learning, Media and Technology*, 38(4), 355–367, 25 April 2013. https://doi.org/10.1080/17439884.2013.783597

15 Kontovourki, S., Garoufallou, E., Ivarsson, L., Klein, M., Korkeamaki, R-L., Koutsomiha, D., Marci-Boehncke, G., Tafa, E. and Virkus, S., 'Digital Literacy in the Early Years: Practices in formal settings, teacher education, and the role of informal learning spaces. A review of the literature'. COST action: digilitey.eu, 2017. https://repository.afs.edu.gr/bitstream/6000/367/4/Digital%20Literacy%20in%20the%20Early%20Years%20Practices%20in%20Formal%20Settings,%20Teacher%20Education,%20and%20the%20Role%20of%20Informal%20Learning%20Spaces.pdf

16 Sefton-Green, J., 'Literature Review in Informal Learning with Technology Outside School'. *NESTA Futurelab Series* Report 7, 2004. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.946.9873&rep=rep1&type=pdf

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