

Research Agenda

Working Paper

Digital Futures Commission

November 2020

The Digital Futures Commission

The Digital Futures Commission (DFC) is focused on putting the needs and interests of children and young people into the minds and workplans of digital innovators, business, regulators and governments. It calls for a critical examination of how children's lives are being reconfigured by innovation, so as to reimagine the digital world in value-sensitive ways that uphold rights, and to take practical steps to meet children's needs. This document is a snapshot of where the DFC is seeking to make an impact. As the work progresses, and through the process of consultation, we imagine this paper will evolve.

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Full biographies and more details about the team can be [found here](#).

The Problem

How do we put the needs of children at the centre of our increasingly digital world?

Children and young people are increasingly excited by and committed to all things digital. They are often pioneers in the digital environment, creative and skilled in diverse ways, and keen to be consulted about and to take responsibility for their participation. But does society know what good looks like for children now and as they grow up in a digital world? Despite being around one in three of the world's internet users, children are invisible in most policy and public debates about digital technologies, and in most technology-related research, innovation and practice. So key questions about their rights and needs are still unanswered.

Too often, the influential organisations spearheading the digital revolution imagine “internet users” to be adults, and invulnerable adults at that; the digital environment is primarily designed for them. Most organisations wish to respect children's rights and support their wellbeing, and are keen to learn from and contribute to emerging good practice. Yet in the rush to innovate, designing and providing for children and young people gets deferred to “later” because taking them into account seems “difficult,” mired in “red tape,” and is framed as impeding innovation or simply too expensive. It is even argued that advocating children's rights in the digital environment undermines human rights and freedoms, because “special pleading” on behalf of children results in poor regulation or becomes a Trojan horse for government surveillance.

The result is a series of failures, injustices and missed opportunities – with government, technology companies, schools and others criticised for risky design, poor practice, datafication, privacy infringement, commercial exploitation, discrimination, and more. These adversely affect children and young people, as documented by a fast-growing literature on online harms. They also affect parents and caregivers, who are in turn positioned to ensure children's wellbeing in a digital world over which they themselves have little agency and control. Finally, they affect society, including the government, business and civil society. Public trust in both government and digital service providers is plummeting. A host of clinicians, educators, youth services, health visitors, regulators and consumer bodies find themselves picking up the pieces, often at public expense and considerable human cost.

Although the panicky headlines are often overblown, and the causes of childhood ills more complex than can be simply attributed to “technology,” the perception that children are the guinea pigs of the digital age contains some truth. Meanwhile, the early promise – of a connected world of information, participation and global interchange – remains far from many children's realities.

The proposition

Since digital contexts are rarely designed with children in mind or, when they are, they prioritise protection over children's other rights, changing the frame is a priority. The DFC addresses the range of stakeholders concerned with children and/or the digital

environment from the public, private and third sectors. It calls for a critical examination of how children's lives are being reconfigured in a digital world, so as to reimagine the digital world in value-sensitive ways that uphold rights, and to take practical steps to meet children's needs. This is in children's interests, and in everyone's.

The DFC seeks to inspire innovation in the digital environment that is consistent with children and young people's "best interests" – the foundational principle of the UN Convention on the Rights of the Child (UNCRC). It imagines digital futures (plural) for a public that includes children and does not bracket them off as an exception, problem or afterthought. Recognising that digital innovation is heavily driven by private sector investment, and shaped by public institutions and regulation, the Commission will centre the importance of innovation as a crucial means of advancing children's rights and needs.

Innovating in the interests of children and young people in a digital world demands fresh thinking from business, regulators, law enforcement, civil society, and more. We believe that, notwithstanding the present global pandemic, there is an appetite for fresh and positive thinking, inclusive deliberation, independent expertise, and the development of practical ideas and tools, as also set out in the forthcoming UNCRC General Comment on children's rights in relation to the digital environment.

While many organisations address either children's needs or technological innovation, expertise in and attention to both domains remains rare. Moreover, at the intersection of children and technology, attention concentrates on child protection, and on the provision of commercial services targeted at children. As an applied research project aiming for significant impact, the DFC is a distinctive contribution in its holistic, child-centred approach. It will integrate the insights from regular consultation with children and young people with the normative values of a child's rights framework. Its ambition is to embed children's rights and needs in digital innovation processes from the moment of early inspiration through to the distribution of products and services.

Three work streams

Children's lives are shaped by key institutions – family, school, health and welfare, civil society, the state. Their lives are also, and increasingly, reliant on commercial activities and a digital infrastructure. Recognising ongoing multi-disciplinary research and related initiatives and interventions, the DFC will prioritise three work streams. These begin with the two primary socialising agencies – family and school. We then address digital service provision more widely. Each will recognise children's evolving capacities (from birth to 18) and diverse circumstances.

1. **Play in a digital world:** this will develop an assessment of the value of play for children, evaluate current opportunities for digital play, and propose ways to enhance play in the digital world.
2. **Beneficial uses of education data:** this will explore current uses of student data in education settings and set out a beneficial, privacy-enhancing and rights-respecting framework for data in education.

3. **Guidance for innovators:** this will identify and assert ways to design and innovate with children's rights in mind so as to embed positive change among digital service providers.

For each work stream, the task is to encompass and move beyond the familiar preoccupation with harm to identify and demonstrate what good looks like for children in a digital world. Each tackles a pressing problem that requires us to rethink the design and management of the digital environment. The work of the DFC will focus its inquiry on the situation for children in the UK, so as to be practical and targeted regarding the evidence and recommendations relevant to particular stakeholders and circumstances. However, we hope to achieve an international ripple effect and will engage with interested stakeholders to advance this ambition.

The Digital Futures Commission will pursue these three work streams in parallel during 2020-2023, also exploring their synergies to deliver a cumulative understanding. It will draw on insights and expertise from its partners and other experts, staying responsive to wider developments regarding children's digital experiences and the socio-technological landscape.

The work will begin with a desk review of recent children's consultations, followed by deliberative workshops with children, parents and the children's workforce conducted at strategic points during the work, to ensure that children's views, experiences and interests are foregrounded throughout.

Work stream 1: Play in a digital world ('Play')

The problem

Play is a vital way in which children enjoy and express themselves, develop, build relationships and participate in the world. Society has a vivid sense of the importance of play in childhood, informed by ideas from philosophy, psychology, the humanities and more. These ideas have inspired child-centred interventions in urban design, pedagogy and opportunities for children's agency and fullest development. But today there are many unanswered questions about digital play, with society tending towards anxiety, restrictions and risk aversion when it comes to children's digital play. At times, safety and privacy concerns overrule children's freedom to learn and grow through exploring, experimenting and making mistakes. Meanwhile commercial interests risk undermining children's experiences through practices of datafication, algorithmic maximisation of attention, persuasive design and wilful inattention to children's evolving capacity. So, now that children spend considerable parts of their lives online, how do we bring the rich ideas and experiences from the longer and broader history to shape the digital environment?

The proposition

Recognising that play conjures ideas of agency, pleasure, imagination and participation, we will examine how these could be more ambitiously facilitated in the digital environment, with an emphasis on promoting the "free play" that seems particularly restricted online. Our research will identify the qualities of free play, relating these to other forms of play, including adult-guided, learning-focused, therapeutic and recreational play. The conditions that support children's play – times, spaces, social relations, other resources – will be critically examined, as will the multiplicity of barriers

to play. The idea is to extend and adapt the qualities of free play to the digital environment to co-create a vision of what good looks like for children's play in a digital world. This will encompass, but not be restricted to digital play, ways that can inspire providers, policymakers and the public to deepen and diversify the possibilities for children's play.

Methods

We begin with a narrative literature review exploring how and why play is essential to childhood. This will recognise children's diverse and often unequal lived experiences, drawing on multiple disciplines and traditions of thought developed over decades and more. To support the review, we interview a series of key experts on play from different perspectives. The resulting insights will be distilled to highlight the qualities of free play. This will form the basis for a consultation with children and young people, parents/carers, and professionals who work with children during Winter 2020/21. They will be asked to deliberate on how the qualities of free play manifest in the digital environment, thereby generating a shared language to discuss the benefits of play, identify the enablers and barriers, and evaluate diverse digital play experiences.

Outcomes

All relevant parties will have a greater understanding of the importance of children's free play in a digital world. The vision of free digital play that results will be of value to families and to professionals who work with children and as well as for those who specifically create digital play opportunities (content creators, game designers, and other digital service providers and regulators). It will also inform the rest of the DFC's work by setting high expectations for children's agency in a digital world. Our translation of the qualities of free play in a digital world into practical tools and related outputs by which digital provision may be evaluated will be launched in summer 2021.

Work stream 2: Beneficial uses of education data ("Data")

The problem

Huge amounts of children's data are being collected by organisations involved in children's learning and education, especially by schools. Public discourse is full of hyperbolic hopes regarding education data, fuelled by rapid developments in big data, learning analytics, robotics and AI, along with rising fears of misuse, manipulation, exploitation, surveillance, algorithmic profiling and bias which generate latent effects, such as stratifying and limited life chances. As children become datafied from birth, and seemingly in everything they do, trust in organisations' data processing is dropping, although not yet for that most trusted of institutions: the school. However, schools, along with students and parents, often struggle to make informed choices, and nor have they sufficient say on the usage of education data beyond the classroom. Crucially, there is a lack of clarity regarding the nature and regulation of student data usage, and an analysis and framework for beneficial uses of education data that centres children's best interests is urgently needed.

The proposition

At the heart of this work stream is the idea that the school, as an institution, exemplifies not only the problem but also the promise of what beneficial uses of data could look like. As a microcosm of society, treatment of student data matters to individuals, and for education and the wider public good. We will critically review policies, regulation and

practice regarding uses of children's data for educational, administrative and other purposes and consult the experiences and views of teachers, staff, parents and students to learn from good practice. The aim is to identify practical solutions that can ensure that advances of big data, learning analytics and AI benefit children's education and serve children's interests.

Methods

A desk review and stakeholder interviews will scope the relevant organisations and services that process education data. Consultation with those with ambitions to use children's data to improve educational outcomes will inform the mapping of existing policies and regulations (and significant gaps) regarding uses of children's data in schools (encompassing educational, informational, administrative, safeguarding and other technological systems in operation). Through design-focused, deliberative user research, we will establish current uses of children's data within and linked to the school, and enable schools, teachers, students and parents to co-create and reimagine how education data could be used. This will be analysed in conjunction with a mapping of the legal and regulatory landscape to pinpoint gaps and generate recommendations for beneficial uses of education data.

Outcomes

The outcome will include a better understanding among schools and school leaders, families, and relevant other actors regarding how education data is used, as well as the opportunities and risks that may arise, and where to turn for information and redress. Also anticipated is a clear vision of what practical and regulatory changes are needed to empower schools as children's rights-respecting institutions, and enable educators, students and parents/carers to realise children's rights to protect and benefit from uses of their data. In support of these outcomes, the main outputs will be launched in January 2023.

Work stream 3: Guidance for innovators ('Innovation')

The problem

Technological innovation is proceeding at a rapid rate across the entire value chain, much of it commercially-motivated and driven by economic competition rather than the public good, much of it transnational rather than national. In seeking new markets, size and profitability matters. Children get marginalised conceptually in the design of digital services for the misleadingly-generic "internet user," "general population," or "household" (including the "smart home") and they can become invisible, practically, in uses of supposedly de-identified big data collected from the city, school or "family." As a result, services can fail to address the needs and rights of their child users, while the child rights and safety communities find themselves effortfully trying to retrofit finished products and child-blind regulation and practice, to avoid the worst problems.

The proposition

Focusing on design and innovation by providers of digital services, this work stream will define and assert the importance of children's needs and rights to ensure their best interests are considered before innovations are "baked in." Since children use all kinds of digital services, we will encompass both services which explicitly provide for children and the many more which count children among their users or which impact on children in some way. The idea is to embed and 'normalise' consideration of the best interests of

the child in innovation processes. In our work, ‘normalising’ the best interests of the child emphasises structural mechanisms for children, as social agents, to dynamically manage and negotiate terms of their interaction and relationships with social and technology agents online.

Methods

To map the existing guidance used by innovators and the relevant regulatory frameworks, business interests, and compliance mechanisms, a mixed method approach will be adopted. This will include desk research, a series of expert interviews, consultation with children, industry, and other relevant actors, and possibly a cross-sector survey. The mapping exercise will encompass existing and emerging guidance related to children’s rights or other rights-based or value-sensitive systems of design (e.g. tech for good, Universal Design standards for accessibility, Child Rights Impact Assessments, the Age-Appropriate Design Code, human rights guidance for data or artificial intelligence). Particular attention will be paid to the growing calls for privacy-by-design, ethics-by-design and child-rights-by-design, and we will learn from the success of parallel initiatives such as the Surgeons’ Checklist. This work stream aims to develop and test child rights-respecting guidance for digital innovators based on three or more sampled industry case studies where children are not typically focal in the design process (tentatively – connected devices, automated vehicles, multiplayer games).

Outcomes

With the focus on the digital services that substantially impact on children’s needs and rights, the outcome will be a practical understanding among digital providers (and child rights advocates) of what is meant by, and required to embed consideration of children’s rights in processes of digital design and innovation. Tested through key case studies, the main outputs will be launched in summer 2022. These could, in turn, inform self-regulatory instruments or industry standards to embed child rights into digital design.

Synthesising the work streams (“Synthesis”)

To identify and advance a vision and practical tools for what good looks like for children in a digital world, the work of synthesis will run alongside the three work streams. It will be achieved through consultation with children, experts, stakeholders and Commissioners, and critical engagement with wider developments nationally and internationally, and disseminated through regular blog posts, public presentations, participation in policy deliberations, and academic articles. Each work stream allows for focused investigation and outcomes while also standing for something bigger: “play” for children’s agency, participation and wellbeing in a digital world; “data” in schools for the various public and private organisations reconfigured by the emerging data ecology which have consequences for children’s life chances; “innovation” for children’s right to be heard and included in the digitalisation of a society largely shaped by and serving the interests of powerful adults.

A common thread - children’s rights in relation to the digital environment - links the three work streams. The UN Convention on the Rights of the Child articulates children’s rights

to provision, protection and participation, including in relation to the digital environment. As with all international human rights frameworks, it emphasises that rights are universal, interdependent and must not be ranked. Importantly, it highlights that rights often tacitly reserved for adults – notably, freedom of expression, assembly, participation and privacy – equally apply to children. It also includes some distinctive children’s rights – the rights to be heard, to be treated according to one’s evolving capacity and best interests, to protection and play, and to develop to one’s full potential. However, other frameworks of human rights, ethics and wellbeing are also influential in different contexts and will be considered where relevant.

A series of blog posts, academic articles and other outputs will help publicise the work as it unfolds. This will facilitate stakeholder engagement with the challenges likely to be uncovered by the DFC during the coming few years:

1. What conception of childhood is at stake? This includes consideration of children’s “best interests” in a digital world, and how this relates to unfolding debates over values, ethics and interests in relation to internet governance. What are the implications for parental, industry and state responsibility?
2. Defining and scoping “the digital environment,” along with “digital service providers,” “digital design” and the data ecosystem. To avoid technological determinism, a multidisciplinary and contextual approach will be needed. To avoid being quickly outdated, some speculative design for future-proofing will be considered.
3. Evidence relating to children’s needs and rights in a digital world: does the available research reflect the diversity of children’s circumstances, vulnerabilities and evolving capacities? Where is more research needed, and what kinds of expertise can inform the work?

A comparative lens may help pinpoint the rationale and potential for change:

- Comparing the role of the digital environment for children with that of non-technological domains (e.g. why is using an algorithm to grade exams more unequal in its outcomes than using teacher assessments; or, how can digital play be compared with non-digital play?) should reveal what it is about the digital environment that makes the difference and where intervention should focus.
- Comparing children’s claims for distinctive treatment with those of other groups (e.g. digital inequalities or injustices experienced by children compared with older adults or people with disabilities) should reveal in which contexts child-specific or generic solutions are more likely to be effective.

In short, the work will be child-centred and tech-focused, but the DFC will not necessarily prioritise the digital over the alternatives, nor position children and technology in a specialist silo. Rather, we aim to put child rights firmly on the agenda of the technologists, and children’s positive digital engagement on the agenda of regulators, the children’s workforce, and the public. After all, the digital world is the world, and children are its future.