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Children as Internet users: how can evidence better inform policy debate?

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ABSTRACT

As more and more researchers from all over the world are becoming interested in how children use the Internet and mobile technologies, global evidence of both the opportunities that the Internet brings, and their associated risks, is increasing. A new research initiative, Global Kids Online, contributes to this through provision of tools and guidelines to national researchers and comparative analysis of country-specific research findings. For the first time, rigorous and comparable evidence from lower and middle-income countries (South Africa, Serbia, the Philippines, Brazil and Argentina) is available on a range of topics: children's civic engagement, participation and digital literacy, as well as risky behaviour and negative experiences. But to what extent do current Internet-related or broader child rights policies (regarding education and protection) correspond to this growing evidence base? What are the opportunities, through evidence use, for influencing new policy direction related to children and the Internet? Drawing on recent research and an associated policy review, this paper explores the link between the two and provides some suggestions for policy and questions for further discussion.

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Introduction

With close to 3.5 billion users worldwide, the Internet has become a key public infrastructure that has the potential to connect people, companies and businesses, and to facilitate service delivery and economic growth (International Telecommunication Union, ITU 2016).¹ According to UNICEF estimates (Livingstone, Carr, and Byrne 2015) one third of Internet users globally are children, with the proportion of Internet users likely to be higher in lower income countries where the Internet is rapidly penetrating all spheres of public life. Statistics by the ITU show that in developing countries, young people aged between 15 and 24 outnumber the general population by 2 or 3 times (ITU 2013, 150).

What implications does this rapid spread of the Internet and children's easy access have for children's rights, opportunities and well-being?² As children's experiences worldwide

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are increasingly informed by their use of digital technologies, the realisation of their rights will depend on both their physical and virtual environments. Their access to, and use of, information, knowledge and resources will depend not just on their level of digital literacy, but also on the availability, safety and quality of the online content. However, the Internet can also be a place where children encounter risks such as unwanted sexual solicitation, bullying and harassment or even inappropriate marketing and advertising. The risks to their privacy from both corporations and governments need to be weighed carefully when data are collected from online sources. And finally, rapid change and development of the Internet will mean potentially new work environments and opportunities of which we cannot even conceive today. The Organisation for Economic Co-operation and Development (OECD) states that 65% of today's children will have jobs that have not yet been invented (OECD 2016). What kind of skills should children be acquiring through the use of Internet that will enable them to compete in the global market in a few years' time?

Furthermore, access to, and use of, the Internet can be a powerful enabler of the realisation of many sustainable development goals that directly impact on children's well-being. The General Assembly High Level Meeting, which reviewed the implementation of the World Summit on the Information Society (WSIS) outcomes, makes a specific link to the 2030 Agenda and recognises Internet access as a 'development indicator and aspiration in and of itself'.³ The WSIS+10 Resolution further points to the interconnectedness of Internet security and social and economic innovation and reaffirms that human rights should equally apply offline and online.

The UN Convention on the Rights of the Child⁴ offers the most comprehensive human rights framework for advancing children's *protection* (from violence, abuse, harassment and exploitation); *provision* (or access to resources, knowledge, education and health information) and *participation* (civic engagement, freedom of expression and the right to privacy) in relation to digital technologies. Access to the Internet is closely linked to the ability to receive information and to exercise one's right of freedom of expression, and it can be regarded as a primary precondition for the enabling of the fulfilment of other digital rights.

Along with this recognition, there is a growing concern among researchers, child rights advocates and policy-makers that (a) current international and national Internet-related policies do not take children's issues sufficiently into consideration and that (b) child rights and child welfare policies do not sufficiently take account of the developing evidence base regarding the benefits of the Internet for children's learning, access to information, freedom of expression and civic engagement.

The evidence, however, is patchy. In the Global North, initiatives such as EU Kids Online have significantly increased the cross-national knowledge base and contributed to the policy debates. Countries outside of Europe followed suit: first Brazil Kids Online and more recently, with the development of a new research initiative, Global Kids Online,⁵ more countries have joined this quest for evidence. Global Kids Online aims to facilitate national and cross-national research through provision of methodological tools and guidelines for researchers around the world. For the first time, rigorous, comparable evidence will be available from lower and middle-income countries across different continents on topics such as children's skills and digital literacy civic engagement and participation, as well as risk and hurtful behaviour.

In parallel, and often outside the scope of research with children as Internet users, several countries from the Global South have undertaken research, the production of literature, and policy reviews to map out the prevailing policy landscape in relation to information and communication technologies (ICT) in education, child safety online and digital citizenship.⁶ Those policy mappings were often initiated with support from UN agencies (UNICEF and UNESCO), civil society organisations and sometimes, academic institutions.

The authors of this article have reviewed some emerging evidence from policy and literature reviews and recent data on children's use of the Internet, in order to scan the environment and better understand the relationship between evidence and policy related to children and digital technologies. We draw on published reports from the Global Kids Online initiative, as well as policy reviews from Europe, South East Asia, Southern Africa, Latin America and Eastern Europe.⁷ However, one of the major limitations is that countries that carried our policy mappings, did not always have sufficient evidence of the children's Internet use. The exceptions are those countries that, under the Global Kids Online initiative, also carried out cursory policy mappings. These served to align the findings from the research with the current state of policy and provide adequate recommendations for improvements.

Our guiding question for this article is: what are the opportunities, through evidence use, for influencing new policy direction related to children and the Internet? We try to provide some suggestions and open up some questions for further discussion. Our position is that this is by no means an exhaustive evaluation or analysis of all available evidence and policies, but rather an introduction into a debate on the place of evidence regarding children's Internet use in national and international policy development.

International and national policy landscape

When we tried to identify what comprises national or international policy related to children and the Internet, it was difficult to find a straightforward answer; it can mean different things, in different regions, to different stakeholder groups. At the European level, child and Internet-related policies, as policy mappings conducted at OECD and EU level point out, largely fall into two domains: (a) child safety online (*protection*) and (b) empowerment, awareness raising and digital literacy (*provision*) (OECD 2011; Baudouin et al. 2014). While the early policies concerned with children's use of the Internet focused on protection, the child online safety policy agenda in Europe has shifted away from a focus on restrictions and now places a greater emphasis on awareness raising and empowerment of children and their parents (O'Neill, Staksrud, and McLaughlin 2013). Instead of providing a *safer* Internet for children, a more balanced agenda is promoted that recognises the many benefits of Internet use and aims at providing a *better* Internet service for children.⁸ Still, somewhat surprisingly, the comprehensive child rights agenda is missing from many policy debates, especially when it comes to understanding the exercise of children's *participation* rights (such as civic engagement, participation, privacy and freedom of expression).

The policy landscape beyond the EU is not so easy to classify, as it appears rather uneven. Policy reviews and analysis are quite rare, although recently there have been several attempts to analyse ICT-related policy and its focus on online child protection and ICT in education.⁹ While in Europe there has been a shift in focus from 'safer' to

'better' Internet, other regions are yet to embrace this concept, and children's rights, more holistically. Often, policy objectives aim only to combat child sexual exploitation online, an agenda that is sometimes driven by sensationalised media reports and high-profile incidents, rather than reliable and representative data (CJCP 2013). This may be due as much to the lack of comprehensive data on all aspects of children's online experiences, as it is to any specific policy agenda.

In those countries where reliable data on children's access to, and use of, ICTs and the Internet is scarce, any data on children's experience online, both negative and positive, is even scarcer. Where countries are starting to look at policy development, this is often fragmented within and across several sectors, with few attempts to identify the collaborative and complex role of the range of relevant sectors, from child protection and welfare, to education, to information, technology and communication sectors.

At the international level, there have been efforts to develop international regulatory bodies and forms of governance relating to the Internet, for example, through the World Summit on the Information Society (WSIS), INHOPE, Internet Governance Forum (IGF) and the ITU. However, the international organisations involved in Internet governance processes have not systematically recognised the distinctive rights and needs of children as a substantial group of Internet users. In the global debates on Internet governance, children are rarely acknowledged, and when they are acknowledged, it is in the context of child protection, while their rights to provision and participation are overlooked (Livingstone, Carr, and Byrne 2015). The WSIS+10 outcome document, for example, only mentions children once and in the context of challenges faced by 'children, youth, persons with disabilities, older persons, indigenous peoples, refugees and internally displaced people, migrants and remote and rural communities'.¹⁰ This emphasis on children being only a vulnerable group neglects their role as agents and participants in matters that concern them, or even as creators of online content.¹¹

Why is evidence important and what is the role of evidence in policy-making?

Assessing the quality of evidence on which policies might be formulated requires a common definition of behaviour, of what in particular is being measured – negative or positive online experiences – before assessing the extent to which a particular policy or strategy might protect children from online violence or promote the opportunities offered through the Internet. More importantly, basic evidence of how technology is used, accessed, and what it is used for, is critical to understanding the various experiences and needs of different children, and to ensuring that policies meet the multiple needs of all children. While this might seem intuitive, what, for example, constitutes access to the Internet in different environments may vary, as children increasingly use mobile technology to go online, or use different devices, prioritising different platforms and utilities. Above all, it is important to acknowledge that we require different types of data, for different evidence: data on access, use, experiences and needs (baseline data), and understanding of the drivers and contextual interpretation of the baseline data and evidence of what works (intervention or policy data).

Assumptions are also made about, for example, usage patterns, with children living in rural areas assumed to have little or no access. Yet there is emerging evidence from a

number of countries in the Global South that appears to contradict these assumptions, and which shows that access to the Internet and communications is prioritised over many other needs in rural areas (Le Mottee et al. 2016; Phyfer, Burton, and Leoschut 2016). Assumptions as to where and how children access the Internet can influence how policies to promote responsible usage, digital citizenship or online safety are targeted, where resources are directed, and the most appropriate delivery mechanisms for different interventions across environments and constituents. Equally as important is what children across national and cross-national geographies primarily use the Internet for. Qualitative findings from recent research in the Middle East and North Africa draws attention to the fact that many children in refugee camps, for example, use smart phones to stay in touch with their families and community members from home, rather than for other more social or learning purposes. That marginalised children, such as those in refugee camps, have access to mobile technology, itself challenges common assumptions regarding usage and access.¹²

In a situation in which evidence is so scarce, the policy landscape often relies on initiatives that appear promising or seem intuitively correct, yet which lack rigorous investigation or theoretical grounding.¹³ For example, while research has indicated that the threat of sexual assault from a stranger that a child meets online is extremely rare, ‘stranger danger’, a term coined over a decade ago, still defines much of online safety strategy (Finkelhor, Mitchell, and Wolak 2000; CJCP 2013). Conversely, emerging evidence from some countries indicates that boys are at greater risk of some forms of abuse, including sexual abuse, than previously considered. Recent data from South Africa also shows that boys, rather than girls, may be disproportionately exposed to sexual images, and images of sexual violence, both online and offline (Artz et al. 2016) yet this has largely been excluded from policy and legislative considerations in the past, on the assumption that only women and girls can be victims of sexual violence. Data from the same country, collected through the Global Kids Online study, shows that children, when exposed to upsetting or disturbing images online, tend to be more bothered by violent images, or images or text promoting hate speech, than by images of a sexual nature (Phyfer, Burton, and Leoschut 2016). In Argentina, on the other hand, children seem to be bothered most by hurtful messages, discrimination or even pop-up messages and advertising (Ravalli and Paoloni 2016). This has direct implications for both prevention and response services for child Internet users, but has not yet been taken into consideration at a policy or programming level at all.

There is a growing body of similar credible research evidence emerging from high-quality representative studies that have been largely ignored by policy-makers and others responding to their own intuitive and long-established assumptions about how children use the Internet, and the adverse experiences that they encounter online. The section below shows some new insights into children’s use of the Internet and corresponding policy implications.

The evidence of children’s Internet use and its implications for policy

Emerging evidence from the Global Kids Online research studies and reviews shows parallels in the Global South to findings from Europe. However, while many children worldwide use the Internet in a similar way and for similar purposes, the context of their lives, prevailing social norms and their family circumstances vary, so it is impossible to

think that the policy responses to children's online safety or opportunities will be the same. *We argue that, in understanding what drives children's online behaviour, we need to understand their real-life circumstances and that national and global policies need to reflect these realities.* Some examples of the emerging findings and possible policy implications are listed below.

Access and use

Our research shows that *children predominantly use mobile technologies to access the Internet.* About three quarters of all Internet users in India access the Internet from their mobiles (UNICEF India 2016). In countries such as Uganda and Morocco, access to the Internet by children has to a large degree happened first through mobile technology, with Internet access through computers often simply leapfrogged. As noted above, many marginalised children are often assumed simply not to have access to the Internet, and then totally excluded from policy considerations, although they are increasingly reporting access through mobiles. Where children do have access through mobiles, they also worry about the cost of mobile data as it can impede their ability to use the Internet daily or when needed. In the recent South African Kids Online study, the cost of data was cited as the most significant barrier to access by children interviewed across three different provinces (Phyfer, Burton, and Leoschut 2016). A recently published ITU and Broadband Commission paper shows that one of the four Internet-adoption barriers is affordability (Philbeck 2017). As access continues to increase in the Global South, issues of universal and affordable access will be critical. Policies to promote both access and responsible online behaviour should also be focused on mobile technology as much as, or more than, fixed access. This profile of usage also suggests particular challenges for regulation and attempts to ensure a regulatory environment that is both responsive to the needs of children, and that promotes access and usage, should take into consideration the shift towards rapid mobile take-up.

Children of a younger and younger age are going online. In Argentina, for example, close to 40% of children first started using the Internet between 7 and 10 years of age (Ravalli and Paoloni 2016). In the Philippines, the reported average age of first Internet use is 9 years old. While this may not seem like a novelty finding to many – as indeed even toddlers are nowadays using tablets and other digital devices to play games – policies and provision aimed at promoting digital skills and literacy lag behind. A policy mapping conducted by UNESCO shows that in South East Asia and the Pacific, most ICT in education and online safety programmes target children aged 12 years and above (UNESCO 2016). This suggests the need for a significant shift in focus from targeting adolescents and youth only, to provide a policy environment that takes into account this emerging young demographic. Age-appropriate digital literacy could be integrated into early education and early childhood development policies, for both caregivers and young children, and consideration needs to be given to how ICT can be used to deliver services in these areas.

Information, education and literacy

Children use the Internet mostly for social networking and staying in touch with peers, but also for education and accessing information (Byrne et al. 2016). Bearing this in mind, the

question that we ask is whether there is enough positive content online to stimulate children's curiosity and thirst for knowledge and to keep them engaged in creative activities. The European Strategy for a Better Internet for Children, in addition to promotion of a safe environment for children, calls for: (a) the production of creative and educational online content for children and (b) promotion of positive online experiences for young children.¹⁴ This strategy could serve as a model for other regions and countries that are only beginning to develop policy responses.

High percentages of children have basic digital literacy skills but only about 20% (on average) use the Internet for creative activities (creating blogs, videos and websites) (Byrne et al. 2016). A closer examination of education policies worldwide is needed to ascertain if they are sufficiently integrating ICT education and development of more sophisticated digital skills that would allow children's engagement as creators of content, as critical, interactive users and as digital citizens. Creation of online content by children is not only a means of self-expression but also an important vehicle for participation in matters that affect them, participation being one of the underlying principles of the UN Convention on the Rights of the Child.

Related to content, there are findings that show that children (and parents) could increasingly benefit from local and international content in vernacular languages (LeMottee et al. 2016; Phyfer, Burton, and Leoschut 2016), a fact that has largely been ignored across many countries in the Global South. One notable exception to this is Egypt, where substantial steps have been taken to ensure the translation of both protection and rights content into Arabic – although across regions, local and vernacular content, beyond safety messaging and resourcing, is becoming important (Centre for Justice and Crime Prevention and Data & Society 2016).

Mediation by parents and teachers

The generation gap is persistent in some countries and mostly in rural areas. Parents are less likely to be online and children rarely seek assistance from parents to learn how to navigate the Internet. In South Africa, 43% of children report that they would never, or hardly ever, speak to their parents about what happens online, and only 23% talk to their parents about things that bother them online (Phyfer, Burton, and Leoschut 2016). While the majority of parents are relatively disengaged from their child's online activities, their engagement tends to be overestimated by their children. In South Africa, four out of five parents report that they need more information and advice about how to support their children online. In Brazil, three main challenges to parental mediation are devices (more children accessing the Internet through mobile phones), frequency (almost all the time) and location (in the privacy of their bedrooms) (Kids Online Brazil 2014).

Even the notion of a 'parent' and 'parenting' is different in different parts of the world, encompassing a whole range of household arrangements due to factors such as migration, poverty, parental separation and illness. In addition, a prevailing generation gap prevents a lot of parents from understanding what really goes on in the digital world, so messages that policy-makers give to parents about stricter monitoring, control or even engaging in all things digital with their children, may be inappropriate. A balanced approach that puts equal emphasis on parenting skills in general, better communication and

connectedness with children, and promotion of better digital literacy skills, is needed (Livingstone and Byrne 2015).

Safety and privacy

All children occasionally access disturbing content – adult pornography, violent images and suicide sites – but what seems to bother them most is when other children post or say hurtful things about them, hate speech and discrimination (Byrne et al. 2016). Still, research needs to tell us more about what really drives online bullying. Is it an expression of persistent (gender and sexual) intolerance, or simply an attempt to make a joke that went awry? Or both? We need to explore further how societal challenges, such as xenophobia, homophobia and intolerance are linked to bullying and cyber-bullying, in order to be able to develop policies that address the root causes.

Children are gradually shifting from open social media platforms, such as Facebook, to messaging platforms, such as WhatsApp, WeChat or Snapchat, for reasons of privacy. This was particularly evident from the qualitative research in the Global Kids Online countries. But privacy is a less explored concept, as it can include the privacy children seek from parents, from companies that try to reach them in order to market their products and from the public. Today's 13- and 14-year-olds have never known the world without the Internet and may not be so excited about sharing every aspect of their life with the world. Therefore, in order to develop appropriate responses that safeguard children's privacy online, we need to examine the understanding of privacy and what it means to children.

Children frequently meet online friends offline but have developed strategies – both active and passive – to be safe and they usually share their plans with others, including parents (CJCP 2013), despite adults' fears that children behave recklessly or are always in danger when they meet in person those they met online. Rather, children tend to exhibit knowledge and awareness of potential risks, and try to put in place strategies to mitigate those risks (although the degree to which these strategies are effective remains an important question). However, as years of research into child abuse have shown, the potential risks often come from those known to the child and their immediate social circle (Artz et al. 2016). Data from the recent South African Kids Online study shows that children most commonly are approached by, and meet offline, those of the same or a similar age to themselves (Phyfer, Burton, and Leoschut 2016).

Context

Online violence often happens in a climate of pervasive offline violence (Burton and Leoschut 2012; CJCP 2013; UNICEF India 2016). What are the implications for policy responses? Dealing with prevention and protection against online violence needs to be addressed as part of national programmes to address broader social and cultural determinants of violence. These determinants range from the low status of girls in a society, to attitudes that condone or tolerate violence, normative attitudes to violence and high levels of inequality. There is increasing recognition that those factors that make children vulnerable offline are also applicable to online vulnerability (see, for example, Ybarra et al. 2007). Furthermore, evidence shows us that there is a persistent tension between what children do online,

what they like doing, and what policy-makers think they should do. For example, not all sharing of sexually explicit content online is coerced or forwarded by malicious third parties, but may be consensual and indeed part of age-appropriate adolescent experimentation. When exploration of sexuality is taboo in certain societies and sex education in schools almost non-existent (UNICEF 2016), then adolescents are likely to turn to the Internet to find out more about these forbidden topics.

There is also *a tension linked to how children are viewed in certain societies*: as recipients of information and innocent victims, or active agents. This tension could lead to laws and policies that are either overprotective, or so narrow that they do not sufficiently address the underlying problems and challenges. Some of the key challenges related to the existing policy and legislative frameworks are discussed in the following section.

Challenges faced due to existing laws and policies

This diversity in children's online experiences and the variety of contexts may seem rather complex and do not easily lend themselves to simple measures that promote digital inclusion and better realisation of the rights of the child.¹⁵ Not surprisingly, there are many challenges with existing laws and policies, not least because evidence is not consistently used to inform policy-making. Our cursory policy review identified a few.

Legislative frameworks are too narrowly conceptualised. Some legislative frameworks can be too narrow to address sufficiently all the complexities of children's experiences. For example, 'sexting' or the sharing of sexualised or nude images among teenagers is considered illegal in some countries and can result in the prosecution and punishment of adolescents under national pornography laws (UNICEF 2012). In South Africa, for example, under the Film and Publications Act (Act 65 of 1996), children of any age who take and share sexual images of themselves can be prosecuted for the production and distribution of child pornography. A number of charges have been brought within South Africa recently, although each has been successfully challenged in court. Such measures can not only be counterproductive, but are also against the spirit of the Convention on the Rights of the Child as they unnecessarily criminalise children without offering mitigating or alternative measures for juveniles. In addition, blanket measures that do not take into account age appropriateness, the 'intent' or 'consent', can be equally harmful. They not only create a risk that children will be labelled as offenders and placed on sex offenders' registers, but they can also create a climate of unwillingness to disclose such occurrences for fear of prosecution (Byrne, Albright, and Kardefelt-Winther 2016).

Lack of overarching policy on ICT and children. In most of the countries that we reviewed, Internet and child-related policy, when it exists, is scattered across a number of sectoral areas, for example, ICT in education, cybersecurity, child welfare and protection. As a result, these policy measures are covered by various ministries and departments 'in line with their responsibilities and public governance systems' (Baudouin et al. 2014). Where governments assign primary responsibility for children and the Internet arguably reflects, to a large degree, the policy stance taken, and which aspects of children's Internet use are prioritised or emphasised. Addressing these issues purely through one sector only may not be successful; government and other actors that deal exclusively with ICT issues and policy may not be familiar with children's rights, while departments who traditionally deal with children's issues (e.g. social welfare) may know little about the online dimension of

children's experiences. The UNICEF Innocenti report on Child Safety Online (UNICEF 2012) shows that countries that have guidelines for social workers related to online child safety often have separate guidelines for law enforcement agencies, but lack a structured mechanism for the reporting of online abuse, referrals and coordinated actions. As mentioned above, there is still a need to strike the balance in policy between protection from all forms of violence, sexual abuse and exploitation, and the rights to information, freedom of expression and association, privacy and non-discrimination.

Civic rights are often neglected in policy. Policies that address the protection of data collected from children, their privacy online, freedom of expression and various forms of engagement are quite rare. Even when there are attempts to address some of these rights, other rights are generally ignored. For example, Article 8 of the EU General Data Protection Regulation,¹⁶ which deals with information services offered to the child, requires parental consent for the use of data from children under 16. While well-intentioned (to safeguard the data and privacy of child Internet users), this measure puts all children into one homogenous group and 'perpetuates the image of a vulnerable child whose choices, preferences and decisions cannot be trusted' as Joseph Savirimuthu puts it in his blog post, *EU General Data Protection Regulation Article 8: Has Anyone Consulted the Kids?*, on the LSE Media Policy Project Blog. Such measures do not take into account a child's right to participation and freedom of expression and disregard the child's capacity and agency. They are contrary to Article 12 of the Convention on the Rights of the Child, which stipulates that '... the views of the child [should be] given due weight in accordance with the age and maturity of the child.'

Prevailing policy and evidence mismatch. There are always political risks associated with how research findings on children and digital technologies are used by decision-makers. Using partial evidence that serves particular political goals, or ignoring evidence altogether, can have dangerous consequences for children and society in general.¹⁷ Frank La Rue, the former UN Special Rapporteur on Freedom of Expression, states in his report that 'as communications technologies evolve, some States have adopted disproportionate restrictions on freedom of expression, presenting them as measures to protect children from harm while, in effect, they limit the rights of children and adults' (La Rue 2014).

Measure of impact is inadequate. Even with the best-laid plans and policies there are real challenges linked to their implementation, monitoring and evaluation. All the policy reviews we examined have a consistent message: the focus should be on evidence of implementation and not on creation of additional laws and policies (OECD 2011; Baudouin et al. 2014; UNESCO 2016). In the field of child protection, legislative measures that deal with violence and abuse of children are considered to be largely sufficient and should apply equally offline and online. Certain amendments, of course, will be needed to ensure that new forms of exploitation and abuse, including those facilitated by the digital technologies, are recognised as a threat and duly addressed. A policy mapping in South Asia (UNICEF 2016) points out that better implementation of laws will depend on the much-needed reforms of procedural laws and the court system. As we have emphasised throughout this paper, there is a lack of effective monitoring or evaluation of the implementation of Internet and child-related policies. It is therefore hard to conclude which policy models and approaches have made the most significant impact on children and can be recommended for transfer to other countries.

Final word on evidence and policy

'Evidence' itself may also be a contested term, particularly in the digital arena, which is so rapidly evolving and where evaluation science is relatively new. In addition to a severe lack of national or regional quantitative data on children's experiences online, various aspects of children's Internet use are still contested, including the concepts of risk and harm, what constitutes harm and the relationship between the two and across contexts. Different types of evidence could be used to influence policy-making processes at different stages: from generating baseline data and understanding of the problem, to measuring change over time, to assessing 'what works' in the policy arena. What might be considered 'gold standard' experimental evaluation designs such as randomized control trials are rare, and while they may be desirable, they are also costly to implement and so alternative evaluation frameworks and definitions may be required to inform policy.

This may take a shift in thinking amongst policy-makers who are increasingly aware of the need to formulate policy based on evidence, yet with little high-quality research on children's experience of the digital world or rigorous evaluations of policies and interventions, they may be tempted not to act at all. Yet alternative frameworks can be used to assess evidence in a way that can inform policy while the knowledge and evidence base develops. These might include different categories of evidence and practice, such as most significant change methodologies, or qualitative comparative analysis techniques, promising practice or evidence-informed practice. Such approaches suggest that while the extent and quality of evaluations are still developing, this should not provide an excuse for policy-makers to ignore other high-quality research that can inform appropriate policies. Moreover, the adoption of such policy models has to be accompanied by a willingness on the part of policy-makers to challenge the assumptions that they may hold and that general public discourse might reflect.

Notes

1. While the percentage of Internet users in high-income countries is now above 80%, the percentage is much smaller in low-income countries, where barely 35% of the population can benefit from the use of Internet. However, in absolute terms, the number of individuals using the Internet in the developing countries has already exceeded the numbers in the developed ones twofold.
2. Children here are defined as in the UN Convention on the Rights of the Child (below the age of 18).
3. See <http://workspace.unpan.org/sites/Internet/Documents/UNPAN96078.pdf>
4. See <http://www.unicef.org/crc/>
5. For more information, see www.globalkidsonline.net
6. Digital citizenship can be defined as the use of digital technologies in 'an ethical, safe, and responsible way without restricting users from fully participating in and contributing to the knowledge society' (UNESCO 2014).
7. Policy reviews included in this paper were conducted by OECD and the European Commission, UNICEF and UNESCO and are listed in the bibliography. Empirical evidence from national surveys conducted with children aged 9–17 years and their parents in Argentina, South Africa, the Philippines and Serbia under the Global Kids Online project, as well as the findings from EU Kids Online and Kids Online Brazil, were also used. The Global Kids Online research was carried out as a pilot, so the samples vary from country to country and only the Argentina study is nationally representative. Therefore, the findings mentioned here should be

considered as indicative, as the purpose of the pilot was to test, adapt and refine the toolkit and generate some insights into the children's use of the Internet. More information on the methodology can be found in the methodological section of the Global Kids Online synthesis report and the national reports.

8. European Strategy for a Better Internet for Children. (COM 2012): 196 Final.
9. See Burton, Leoschut, and Lloyd (2016); Centre for Justice and Crime Prevention and Data & Society (2016); Bulger and Latonero (2016) and UNICEF India (2016) for examples of policy mapping. Unpublished studies from the Middle East and North Africa region, Uganda, South Asia and India provide further insights.
10. General Assembly Resolution 70/125. Outcome document of the high-level meeting of the General Assembly on the overall review of the implementation of the outcomes of the World Summit on the Information Society. A/70/126 (16 December 2015).
11. The 2016 Internet Governance Forum: Enabling Inclusive and Sustainable Growth has seen a renewed attempt to bring to the fore issues that affect children and young people, ranging from access, and education to social inclusion.
12. See, for example, Centre for Justice and Crime Prevention and Data & Society (2016).
13. One of the best examples, and that most cited, is that of the D.A.R.E. programme, conducted in the United States through the 1980s and 1990s and aimed at reducing substance and drug abuse by children. Evaluations have shown that the programme in fact had no effect on reducing drug use. Other similar examples reflect how inadvertent, intuitive programming can actually increase the behaviour that the programme aims to reduce. The best example of this can be found in the 'Scared Straight' programme, aimed at scaring children into not committing crime. Longitudinal evaluations show how this can in fact increase the chance of offending, rather than decreasing it (Petrosino et al. 2014) – and yet the programme continues to be implemented in some countries by both governments and NGOs.
14. European Commission. European Strategy for a Better Internet for Children (COM 2012).
15. This section expands on the introductory text to the methodological guide *Using Research Findings for Policy-Making* by Byrne, Albright, and Winther, first published under the Global Kids Online research project in November 2016.
16. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).
17. One example of this is the 'Scared Straight' programme, which has been shown to have either no, or in some cases, even a negative impact on children, at times increasing the risk of children coming into conflict with the law.

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