A model for children's digital citizenship in India, Korea and Australia: STAKEHOLDER ENGAGEMENT PRINCIPLES

March 2023

Australian Research Council Centre of Excellence for the Digital Child

Edith Cowan University

Foreword

This report is the outcome of a research partnership between the LEGO Group, the Australian Research Council (ARC) Centre of Excellence for the Digital Child and Edith Cowan University (ECU). This report provides a conceptual model of the principles for children's digital citizenship stakeholder engagement and practical suggestions to apply this model.

ARC Centre of Excellence for the Digital Child

The Australian Research Council Centre of Excellence for the Digital Child is the world's first research centre dedicated to creating positive digital childhoods for all Australian children. The Centre is funded by the Australian Government through the Australian Research Council, in addition to contributions from sector partners. The Centre's research innovates and intersects across fields of health, education, and technology to offer a holistic view of young children and their digital experiences. Centre for the Digital Child researchers are a collective of nationally and internationally renowned scholars with expertise in a range of disciplines, including education, health, developmental science, psychology, sociology, digital technologies and media and communication. The Centre's partnerships with government agencies, technology developers, education sectors, policy makers and community groups help to incorporate real-world insights and closely link Centre research to a wide range of real-world applications.

Edith Cowan University

Established in 1991 and located in Western Australia, ECU is ranked in the top 2.5% of universities in the world, according to the Times Higher Education World University Rankings. ECU's research profile builds on a well-established reputation for high quality teaching, having been the number one public university for teaching quality in Australia (out of 39 Australian universities) for the past 14 years. ECU's rising calibre as a teaching and research institution has also been recognised by its inclusion in the Times Higher Education (THE) Top 100 under 50 list, which distinguishes a new breed of younger universities on a fast track to achieving world class status. ECU's research leverages its unique geographical location, tying the natural environment to the built environment, and is also at the forefront of shaping our digital future, addressing the challenges of the digital revolution.

The LEGO Group

The LEGO Group was founded in 1932, and is a privately held, family-owned company headquartered in Billund, Denmark. The company's vision is to be a global force for learning through play and believes that play has the power to transform a child's life. To continue helping children reach their full potential through the development of important cognitive and physical skills, The LEGO Group is committed to innovating LEGO play experiences. A key area of innovation is inspired by the recognition of digital skills as an important 21st century skill for children to thrive in the future. Recent innovations by the company in this area includes the incorporation of digital elements within physical play, development of digital play experiences, and introduction of tools and resources to help build digitally smart children and families who can maximise the benefits and minimise risks in their digital experiences. This research project is supported by the LEGO Group's Asia Pacific regional headquarters in Singapore and is designed to enhance the LEGO Group's efforts at bringing the power of learning through play to many more children across the globe, including the Asia Pacific region, given the context of increasing presence of children in the digital space.

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Research Ethics

This literature review is part of a study approved by Edith Cowan University Human Research Ethics Committee (Approval # 2022-03255-STEVENSON).

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Table of Contents

Illustration: Phoebe Hui Zeng

PROJECT SUMMARY – CHILDREN'S DIGITAL CITIZENSHIP TODAY

In an increasingly digitised and technically mediated world, an individual's digital citizenship, or "ability to use digital technology and media in safe, responsible and ethical ways" (DQInstitute, 2019, p. 15) has never been more relevant, particularly when it concerns our youngest digital citizens. Navigating online spaces safely and confidently are skills fundamental to a modern individual's social and emotional development, education, work, and play. A digital citizen's abilities, however, are greatly impacted by notions of access; not just physical access, but also cultural and socio-economic mediated access. Less is known about very young children's experiences of digital citizenship, and recent pandemic related events have accelerated moves to even greater online engagement. Such challenges posed to children's digital citizenship development require thoughtful, child-led, culturally nuanced, and research-based solutions. This research responds to those challenges.

This white paper communicates research activities and findings investigating digital safety and digital citizenship through multistakeholder collaborations in three countries—India, South Korea, and Australia. Performed by an Edith Cowan University-based research team from the ARC Centre of Excellence for the Digital Child, supported by the LEGO Group, this research additionally responds to many recent policy and practice reviews arguing for institutional and policy engagement in the Asia Pacific (APAC) that build children's digital safety, literacy and citizenship. These include the UNESCO data-driven report, *Digital Kids Asia Pacific (DKAP): Insights into children's digital citizenship* (UNESCO, 2019), an earlier UNESCO review of policy, *Building digital citizenship in Asia Pacific through safe, effective and responsible use of ICT* (UNESCO, 2016) and a UNICEF scoping paper, *Digital literacy for children* (Nascimbeni & Vosloo, 2019). These reports highlight the importance of stakeholders engaging with new ways to foster digital literacy and digital citizenship.

The research team viewed this project as an opportunity to support policy and industry influencers to take a balanced approach to children's use of technology, and included an approach that considered children's online safety, risk, attitudes and competency. Taking its lead from the report, *The 4Cs: Classifying Online Risk to Children*, in which Livingstone and Stoilova cite the UN in arguing for a "a balanced consideration of both risks and opportunities, recognising the full range of children's rights in a digital world" (2021, p. 3), this research answered the call for risk remediated by the resilience that holistic approaches digital citizenship can offer.

This research acknowledges the concept of digital citizenship as it is embodied in the LEGO Group's Raise Digitally Smart Families guides (The LEGO Group, 2021b, 2021c, 2021d, 2021e, 2021f, 2021g), underpinned by the DQ Intelligence common framework for digital literacy, skills and readiness (DQ Institute, 2019). This concept is applied as a lens to critically examine what children say about their digital experiences, and what policy makers and industry say about young children's digital safety, and the regulations that impact this. A holistic concept of digital citizenship embodies the benefits of children's digital engagement through future-forward competency-building, because the researchers agree with DKAP that "fostering digital citizenship competencies will ensure that today's children have the capacity to maximize the opportunities that ICT offers, while minimizing the risks" (UNESCO, 2019, p. 2).

This research project entailed four main phases of activity, taking place from January 2022 to March 2023.

Literature review – Phase one

Phase one involved project design, ethics approval, a significant 15,000-word preliminary scoping literature review and recruitment of child participants in three countries. This literature review formed the basis of information delivered to adult stakeholder roundtables, prompting and underpinning the main discussion points within. A summary of findings from this phase can be found in the report, *Contexts for children's digital citizenship in India, Korea and Australia: A literature review (July 2022).*

Child roundtables – Phase two

Overview

In phase two, three child-focused, play-based research roundtables were held in each country—Seoul (Korea), Delhi (India) and Perth (Western Australia)—in the months of June and July 2022. In each country, these three child roundtables consisted of one pre-school group (ages 3–5), one primary/elementary school group (ages 6–10), and one late elementary/early high school group (ages 11–13).

Operations & recruitment

Children were recruited via email callout circulated via academic networks and social media. All children's roundtables were attended and supervised by Chief Investigator Dr Kylie Stevenson. In Korea, the roundtables were conducted in Korean language and facilitated by research assistant (RA) Dr Yeonghwi Ryu (Seoul). In India, the roundtables were conducted in Hindi language and facilitated by RA Shruti Das (Delhi) from the Centre for Social Research (CSR). On site translation was provided to Dr Stevenson in Korea and India. Dr Stevenson was the facilitator of the English language roundtables in Perth, supported by RA Dr Kelly Jaunzems. All transcripts were recorded and translated (where applicable) for use in data analysis. All children's names in this review are pseudonyms and any identifying personal details (except age) have also been deidentified.

Guiding research question and methodology

The guiding research question for the child roundtables was:

What are children's everyday experiences of digital citizenship in these countries, and how might these contribute to understandings of digital citizenship frameworks?

Qualitative data was collected from 48 child participants through 90-minute play-based research roundtables featuring three sections: a short introductory drawing activity using prompt cards; a discussion regarding children's understanding (if any) of digital citizenship and a range of competencies within; and a LEGO play activity in which participants were asked to respond to the discussion points and reflect this in their building activity. By including play and drawing activities in the roundtables, and not just a focus on discussion, the researchers aimed to use a range of child-centred data capture methods that suited the children's literacy levels, established a less formal atmosphere, and built rapport with the children taking part. As Ioana Literat argues "unlike in interviews or focus group sessions where an instantaneous response is expected, [in child-centred methods] the research participants are given time to reflect on their responses, which encourages active conceptualization and contemplation" (2013, p. 88). Additional time for reflection and thought gave the participants an opportunity to craft a more complete depiction of their everyday digital experiences, with the added advantage of aiding the researchers to more easily navigate literacy, language, and cultural boundaries.

Illustration: Phoebe Hui Zeng

Data collection and analysis

Photographs of drawings and LEGO creations were taken and collated with full transcripts of the roundtables. A short demographic summary was also collected from parents/guardians of the participant children which reflected the child's individual and family device ownership or access along with any family rules that may have existed around children's engagement in online activities (for example, rules around screentime or accessing content).

Once transcripts and drawings were collected, translated and de-identified, a thematic analysis of the collated qualitative data was performed using NVivo software by RAs Dr Emma Jayakumar and Dr Harrison See. Thematic analysis and coding were guided by definitions of each 'code' or area of digital citizenship being discussed in the comprehensive digital citizenship competency areas outlined in DQ's Global Standards Report (2019) and also informed by the LEGO Group's (2021b, 2021c, 2021d, 2021e, 2021f, 2021g) Digitally Smart Guides. Coding relating to the interpretation of children's drawings and LEGO building creations was also undertaken, informed by children's own descriptions of their drawings within the transcripts of recordings.

Ten aspects (codes): Participant perspectives of key aspects of digital citizenship

Using the aforementioned DQ Institute report and Digitally Smart guides, and in consultation with our industry partner the LEGO Group, the aspects of digital citizenship investigated in these children's roundtables were cyberbullying; screentime; digital empathy; digital footprint; digital identity; digital critical thinking; digital friends; digital play; digital safety; and digital privacy. Along with these, researchers also captured children's reflections on the definition of 'digital citizenship'.

Key messages from surveys and roundtables

- Children we spoke to did not demonstrate a clear understanding of the term 'digital citizenship'. This difficulty in comprehension was compounded by the lack of a unified cross-cultural definition for 'citizenship'.

- Children we spoke to across all three countries were aware of online risk and demonstrated an acceptance that negative encounters were possibilities of online engagements.

- The older the child, the greater the awareness and understanding of risks such as cyberbullying, as well as an increased sense of how to manage such instances.

- Girls we spoke to were more likely to engage with social media platforms for socialization than boys, who preferred gaming platforms. Thus, the majority of cyberbullying or risky encounters were experienced via these two online means.

- The tablet, smartphone and mobile gaming device were the top three nominated devices that children owned themselves. Youngest children (3–5 and 6–10) were more likely to own a tablet, whilst older children (11–13) were more likely to be smartphone owners.

- The most nominated smart device usage across countries was the television, followed by smartphones, then tablets, PCs, laptops, mobile gaming consoles, and fixed gaming consoles. These results include parent-owned devices that children have permission to access.

- Parental mediation of children's access to digital devices was present in all countries and age groups, and most present in the 3–5 age group. 23 parents/guardians (or approximately 50% of participants) stated they had specific time limits for screentime, 37% of parents/guardians had rules regarding content, and 27% had rules regarding location of access.

- Australian children we spoke to were more likely to approach their parents for advice or help with problems encountered online than Indian and Korean children.

- Older aged child participants proposed that cyberbullies lacked empathy, and that perpetrators should be educated to understand real world impacts of bullying others online.

- Most children expressed rudimentary understandings of the concept of a digital footprint as it pertains to data harvesting by sites or apps they use, but no children demonstrated an understanding of how digital footprint or digital identity may lead to reputational damage now, or in the future.

- In age groups 6–10 and 11–13, Roblox was the most common game discussed, followed by Minecraft. In general, older children discussed playing more on phones and computers, whilst younger children played more on iPads/tablets. No children in the 3–5 groups we spoke to were permitted unmediated access to the internet.

Data collection and analysis – Phase three

Phase three involved the collection and analysis of child roundtable data including drawings, transcripts of discussions and LEGO play creations. This, along with the literature review, formed the basis of the presentations delivered to adult stakeholder roundtables groups in India, Korea and Australia in Phase four (a).

A detailed account on the children's roundtables findings can be found in the report, *Children's perspectives of digital citizenship in India, Korea and Australia: Report of findings from children's digital citizenship and safety roundtables* (October 2022).

# Adult roundtables – Phase four (a)

Overview

Adult Roundtables were scheduled in 2022 within a two-week timeframe: in Seoul, Korea on Tuesday 8th November, in New Delhi, India on Thursday 10th November, and in Melbourne, Australia on Thursday 17th November. Roundtables in India and Australia were conducted in English language by Dr Emma Jayakumar. In Korea, the roundtable was led in Korean language by Dr Yeonghwi Ryu, supported by Dr Jayakumar. Each roundtable included a country-specific research presentation: *Contexts for children's digital citizenship literature review* and *children's perspectives of digital citizenship*. All roundtables were held in professional conference facilities. In Seoul and New Delhi, these were in-person events and in Melbourne, it was a hybrid event.

Operations and recruitment

The recruitment of adult stakeholders was guided by ECU who prepared recommendations (primarily ascertained from the project's extensive literature review) of the most relevant policy stakeholders including representatives from government, academia, non-government organisations (NGOs), and industry, with a goal of minimum 15 participants per research roundtable. This was followed by a participant recruitment process for each of the adult roundtable groups led by separate teams from the LEGO Group Singapore's designated logistics management group, APCO Worldwide in Seoul and New Delhi, and by the APCO-affiliated Sefiani Communications Group in Australia, supported by weekly contact with the ECU team leading up to the roundtables. The final participant numbers were 46 roundtable participants in total: 17 attendees in India, 15 attendees in Korea, and 14 attendees in Australia. (Adult participants have been deidentified in this report and the pronoun 'they' has been used for further deidentification).

Attendees per sector (**Indian** Roundtables)
Total attendees = 17

*Academia
0%

NGOs
29%

Industry
65%
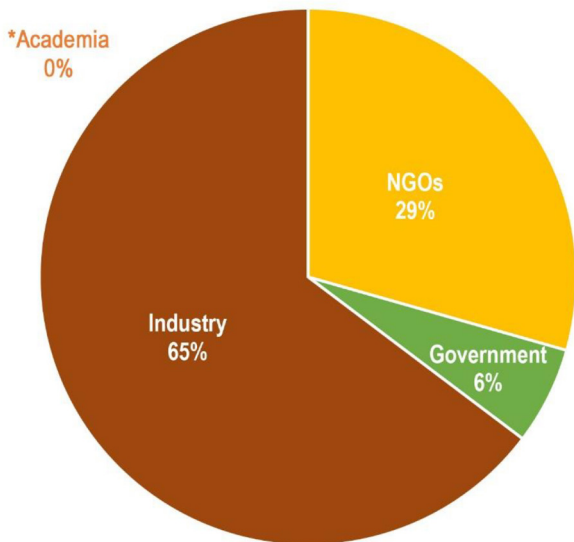
Government
6%

Attendees per sector (**Korean** Roundtables)
Total attendees = 15

Industry
7%

Academia
33%

Government
33%
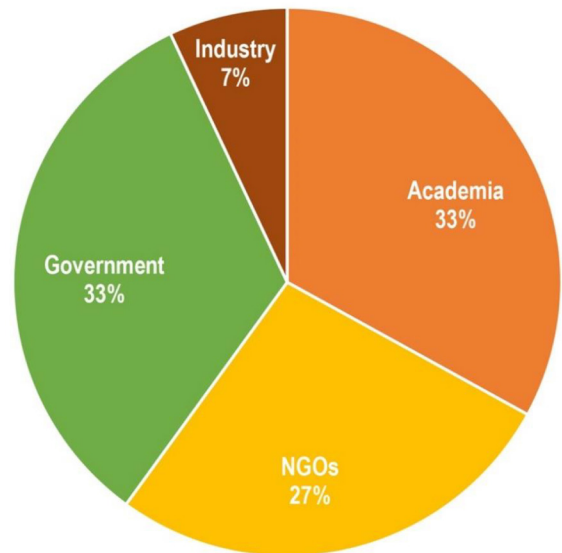
NGOs
27%

Attendees per sector (**Australian** Roundtables)
Total attendees = 14

Industry
14%

Academia
29%

Government
14%
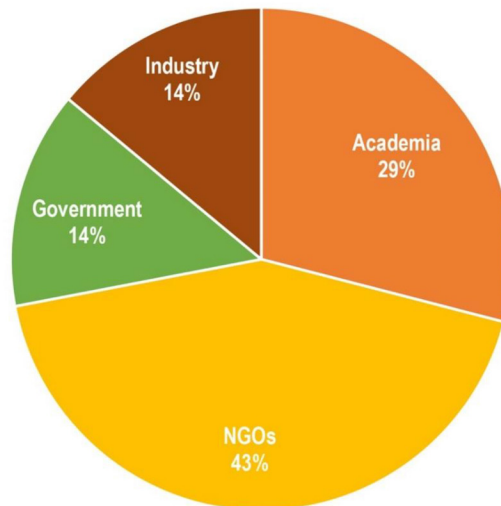
NGOs
43%

■ Academia   ■ NGOs   ■ Government   ■ Industry

Figure 1: Breakdown of representation by sector for each adult stakeholder roundtable

Guiding research question and methodology

Phase four (a) roundtable activities were guided by the research question:

> *How might engagement with adult stakeholders bring about understandings of industry practice, policy and legislation that contribute to supporting the development of children's digital citizenship; and how might this support a holistic approach to young children's digital engagements?*

This was investigated by researchers in adult stakeholder roundtables of 90 minutes duration in each country, in which participants were presented with data and findings from the phase one scoping literature review and phase two children's roundtables report, with roundtable discussion exploring issues raised further. Discussions were also informed in part by a preliminary analysis of pre roundtable survey responses. (In Korea and Australia, the researcher had prior access to these, and in India the participants arrived on the day and filled in a survey prior to the scheduled roundtable). In Korea and Australia, Jayakumar wrote many of these main points on two large whiteboards as guiding discussion points, along with a definition of digital citizenship from the DQ Global standards report as "the ability to use digital technology and media in safe, responsible, and ethical ways" (DQ Institute, 2019, p. 15). In India, Jayakumar referred to the discussions and surveys read from Korean roundtables, finding many points of interest common to Korea and India.

illustration: Phoebe Hui Zeng

Pre roundtable surveys: Defining and conceptualising digital citizenship.

Commonalities and divergences

Defining digital citizenship: Indian, Korean, and Australian adult stakeholder participants variously defined digital citizenship as a combination of skills, understandings and competencies that enabled individuals to participate and collaborate safely, responsibly, and positively online. Terms such as 'democratic' and/or 'democracy' were often used to conceptualise definitions of digital citizenship. From this notion, stakeholders also asserted that digital citizenship was an extension of a citizen's rights, responsibilities and social virtues. All stakeholder participants agreed participation online was a human right, for both adults and children. Also consistently asserted was the need for common and child-centred terminology, conceptions, and language pertaining to digital citizenship. This suggested that this term is not commonly used or known by all stakeholders engaged with the digital space. Furthermore, sentiments of this nature vary between sectors and cultures, resulting in inconsistent definitions of digital citizenship.

Call for evidence-based approach: Stakeholders argued for more rigorous research to yield more evidence-based guidelines and policy, and emphasised the importance of a digital citizen developing digital skills in tandem with safety and privacy practices. Each country's varying conceptualisations of digital citizenship development were notable; for example, where all countries asserted the need for early education, multiple Korean stakeholders asserted that citizenship and, by extension, digital citizenship are concepts to be developed over an individual's lifetime.

A lack of a cohesive approach: Whilst survey responses were influenced by the various backgrounds of participants, in all three countries participants overwhelmingly iterated a lack of a cohesive approach both in communication between various stakeholders regarding digital citizenship and resources, in the adoption of singular terminology, and in coordinated approaches to digital citizenship education and awareness across all sectors. One Korean academic provided an apt metaphor for this problem in their survey, describing it as a "lack of [a] control tower for digital citizenship". This sentiment was returned to in each country as a discussion prompt by Dr Jayakumar in roundtable sessions and the lack of a cohesive central approach was enthusiastically and robustly taken up and acknowledged as a stumbling block for all countries.

Country-specific foci: The focus of each country's roundtable discourse was likely impacted by the professional background, priorities, and interests of stakeholder participants (see Figure 1 for a breakdown of participant representation). Australian stakeholders generally focused more on early education, whilst Indian stakeholders focused on empowerment, activism, and social justice. Korean stakeholders emphasised early education and intervention, as well as perspectives accentuating civic responsibilities of citizens.

Acknowledgement of positive outcomes of children's online experiences:
Many discussions noted online spaces as important places for children to build their identity, interact socially and connect with others. Social media platforms and some gaming platforms were places where children could experiment and express themselves and explore aspects and notions of their identities. Many children also displayed management skills (like conflict resolution or management) learned after exposure to challenging situations online. Adult stakeholders acknowledged these points and also emphasised the need to strike a better balance between protectionist approaches and the affordances a rights-based and positive participatory approaches present for children.

Country by country summaries of adult stakeholder pre roundtable survey responses follow.

INDIA

Indian adult stakeholders generally defined digital citizenship as a wide-ranging set of skills and understanding that enabled 'netizens' (a term used by multiple Indian participants) to participate, contribute, and adapt to the digital world safely and responsibly. Although the importance of more tangible skills—such as digital literacy, media literacy and digital safety—were highlighted, multiple definitions stressed a need for digital citizens to develop an understanding of their rights and responsibilities as a pathway to social empowerment. Underpinning these emphases was the notion that digital citizens were obligated to contribute responsibly and positively to digital spaces. For example, Padma expressed digital citizenship as the "agency to use … for personal [and] social good", while Anand defined digital citizenship "in terms of access and equality".

For multiple Indian stakeholders, the obligation of digital citizens to contribute responsibly and positively to the digital world also extended to those who facilitate digital spaces. Stakeholders expressed that online platforms, organisations and governments needed to be accountable for the nature of digital spaces as much as citizens in general.

Additionally, Rahjan commented in the survey that "digital citizenship envisions a collective of peoples without geographical or physical boundaries". A representative of an NGO agreed that this is one of the most empowering aspects of digital citizenship for Indian peoples, many who are struggling within rigid caste systems, gender mediation and disadvantage for girls, and significant disparities in wealth distribution and access to education.

Numerous industry representatives called for the government to develop age-appropriate controls that favour "access and discovery". However, many claimed a general lack of knowledge-building for Indian children around digital etiquette. Indian participants argued that digital spaces are important means of expression, identity building, confidence/resilience building, and means of connection and community building for young people. As there is little perceived autonomy for Indian children to express themselves in online contexts, digital citizenship engagement is therefore "central to feelings of identity, agency, voice and feelings of empowerment".

The prevalence of participants from NGOs and industry thus led to many proactive statements about impactful digital experiences by organisations working to improve areas of difficulty in India, such as gender parity and access, anti-child exploitation initiatives, and anti-violence advocacy. Many participants advocated for children's rights in online spaces. Cyberbullying was seen by most participants as the biggest issue Indian children face. This was closely followed by issues in relation to lack of privacy (data breaches), and the prevalence of availability of child sexual abuse material (CSAM) and the grooming of children for CSAM purposes (linking back to privacy issues). Additionally, free and open criticism of government for the lack of a coordinated approach to tackling issues of privacy and exploitation was notable, with one industry think tank representative nominating that "challenges in India are aggravated by regulatory uncertainty in India".

KOREA

Korean adult stakeholders variously defined digital citizenship as a collection of attitudes, understandings and competencies required by individuals to actively participate as members of their online community. Specifically, such participation was described as expressions of personal agency that enabled positive social contribution and civic responsibility. For example, many participants expressed that an effective digital citizen contributes to their own well-being as well as community prosperity. Participants nominated positive outcomes of online engagements for children such as the ability to test out identities, children's sense of belonging to a community, and independent learning opportunities that online experiences afford. Multiple stakeholders conceptualised digital citizenship as an extension of citizenship; for example, Min-seo asserted that "just as the rights and duties of a citizen are given in the offline world, the rights and duties of a citizen are given in the online, especially the digital world".

Multiple stakeholders similarly expressed that digital citizenship is something to be developed over an individual's lifetime and associated it with social virtues of leadership and harmony. For example, Chan-hee commented "digital citizenship should be

expanded through conception and lifelong learning". In a similar vein, Ji-Min stated "digital citizenship is an essential competency that the born digital generation, who has experienced digital civilization since birth, must have in order to live happily and safely in the new digital environment". One participant stated that, at present, the educational/ training focus for children is perceived as too minimal; another mentioned "long term training not one time training" was required. For children, there also needs to be a greater awareness and understanding of algorithms and data collection. The concept of digital citizenship was linked by multiple stakeholders to critical thinking and media literacy, as opposed to purely technical skills or digital literacy.

Concerns about age regulation and supervision were described as motivating factors for establishing more appropriate guidelines and policy. Academics cited a lack of research on essential self-regulatory behaviour such as self-managed screen control and sedentary behaviour linked to excessive screentime with young children. There was also a perceived lack of education/awareness for young people around managing privacy, stranger danger, and reputational damage. With that noted, balancing children's protection with their freedom emerged as an important theme with Korean participants, who voiced concerns about digital citizenship education being focused too heavily on safety. Participants called for more research creating informed practical frameworks to strike this balance more successfully, arguing that overly protectionist approaches could impact children's rights to participate in digital spaces.

An important addition in Korean surveys were sentiments regarding the over reliance on educators bearing the burden of children's digital citizenship development. Participants expressed that there is a "lack of control tower" meaning that there is no collective, coordinated approach to digital citizenship education and awareness for children in Korea. However, they also identified that it is also everyone's responsibility to enact change and progress in the digital realm.

AUSTRALIA

Although an all-encompassing definition of digital citizenship was generally espoused by Australian participants, definitions predominantly fell between two categories: firstly, skill-building digital literacy to maximize benefits; and secondly, facilitating safe and protective practices minimising risks. Within these two broader areas, more nuanced notions concerning agency, empowerment, and participation of children—as well as other skills, such as critical thinking, self-efficacy, and media literacy—were also featured. Multiple stakeholders commented that communication of more nuanced definitions and behaviours within digital citizenship development beyond basic skills and safety focuses were necessary.

Participants saw digital citizenship as a concept that is important for young people to grasp as it encourages an active sense of community and impetus for all people to participate in society responsibly, whilst digital citizenship education was seen to equip Australian children with the agency, skill, and capacity to create and consume content. Digital citizenship was also seen to foster a more positive, agency-led dialogue with children changing focus from "what kids are doing wrong to what they can do right". For example, Kenneth commented that "too many of the digital citizenship programs focus on the extreme risks of being online that are not the everyday experiences". In response, it was suggested that Australian children often lack an appropriate or nuanced understanding of personal boundaries or what is inappropriate behaviour when interacting online and are often left to "fend for themselves" in these areas. Similar perspectives were shared by other stakeholders, such as Connor who commented that "digital citizenship conversations are more commonly framed with an eSafety focus rather than a citizenship focus… they are often reactive rather than promoting the agency and voice of young people in digital spaces". They additionally advocated for the importance of "sending a clear message to young people that your digital avatar and experience is an extension of your physical one". Acknowledging the complexities of these sentiments, Connor added that "there still seems to be some confusion about the place and role of anonymity online".

Privacy, particularly "datafication of childhood" (through online learning and Edtech influences) and sharing of personal information (such as non-consensual sharing of images) were mentioned as examples of challenges in these areas. However, positive benefits of navigating online worlds were identified in relation to resilience building experiences gleaned from exposure to challenging situations and risks online. Such situations were viewed as promoting safer behaviours, confidence, and skills for better management of similar situations in the future. Guidance was expressed as key.

Although stakeholders agreed that a balance between developing agency and enacting protection must be struck, what this balance entailed was still a point of conjecture. One participant suggested that national government could unify the curriculum approach across states. Though it is understood that there are excellent resources available to Australian children, a lack of connection to much of this material in everyday contexts when children and parents participate online was perceived as a problem.

Other participants cited challenges for Australian children, including device dependency, media balance (especially since COVID), and mental health issues surrounding cyberbullying. Another participant nominated sexual exploitation as a main source of danger for Australian children online, as is their potential for access to more readily available and inappropriate content such as pornography.

The concept of "safety by design" practiced in their own organisation was mentioned by one participant as being a responsible way to approach digital citizenship education and awareness, along with another stakeholder championing the facilitation of digital "safe spaces" where children can "safely share content for collaboration …. [with facilitators/teachers] having the skills to inform students and to monitor content that is posted". Woven throughout most Australian stakeholder conceptualisations of digital citizenship was an underlying focus on ethical community engagement, where digital citizens should be aware of their rights and responsibilities as active participants who create, collaborate, communicate, and consume content safely with others online.

Phase four (a) digital safety and citizenship roundtable discussions

Commonalities and divergences

There were many culturally specific results in discussions of digital citizenship in the three contrasting societies represented in the study. There were, however, also several commonalities in key topics and issues raised, particularly around calls for larger organisations and manufacturers to take on a greater portion of the burden surrounding education and awareness, and the need for a more coordinated approach toward digital citizenship development.

Also common were several discussions centering on the need for children to develop more critical thinking capabilities. In Korea, these capabilities trended more toward the need for children to self-regulate screentime and reduce sedentary behaviour, but in all three countries there was significant discussion surrounding a need for children to be aware of algorithms and data harvesting and how this may affect their online interaction. In Korea, the topic was prompted by Jayakumar but there was little need for prompting in India and Australia as all participants acknowledged critical thinking capacity around data privacy as an important skill needing more development in their own countries. Australian participants noted the richness of resources supporting children's digital skills and citizenship available to individuals, families, and educators in Australia, but pointed out the problem of lack of awareness of the availability of these resources. For example, they questioned the efficacy of real-world integration of such resources into the Australian school curriculum. One Australian academic argued that there was too great a focus on the "low end of the harm continuum" in Australia, and that sexual exploitation of children was of particular concern in digital environments, and they felt that this high end harm required stronger action. In agreement, but offering a solution, a senior academic researching in partnership with some Australian Edtech providers argued that increasing digital literacy had the effect of decreasing anti-social

behaviour, along with lessening instances of violence and threats against children of this nature. All countries' participants agreed on the importance of further children's digital citizenship development in their countries, commencing from young ages.

An interest in the research process was also common to some roundtables. Korean participants were concerned about the brevity of the study and made several recommendations for the research to delve more in depth with both more extant literature and a greater number of child participants to elicit (in their view) richer results, also noting the limited variance in demographic areas represented by child participants.

By contrast, in India there was an eagerness to share culturally specific insights that augmented the existing presented research; for example, there was a vibrant discussion surrounding the caste system in India, and how the internet as a space presented opportunities for more democratic involvement freer of class disadvantage. Also in India, there were varied discussions surrounding the many affordances that access to digital spaces provided in surprising areas such as health awareness and record keeping.

Participant roundtable groups in each country did not uniformly reflect equal numbers of the designated recruitment areas of government, academia, NGOs, and industry. This could be said to have influenced the tone and nature of respective discussions that emerged. For instance, the dominance of government representatives and academic researchers in the Korea group led to a discussion focusing on their preferred research project design, and critical reflections on the brevity of study and small pool of participants. Discussion in India was influenced by the presence of many NGOs in the New Delhi roundtable and tended to focus on the varied Indian children's digital citizenship development activities, with participants more willing to cast critical eyes on government initiatives and education areas that they deemed were wanting. In Australia, discussion had several foci: firstly, possibly due to the relatively higher number of academics present, the ways the children's roundtables research findings correlated with roundtable participants' own research findings was discussed; secondly, a focus on advocacy for children rights to participate was likely due to the representation among participants of NGO groups and digital rights advocates. There was also robust discussion about school initiatives surrounding digital citizenship development owing to the number of educators and Edtech representatives present in the room.

Summary of country-specific issues

INDIA

- Adult stakeholders were critical of the Indian government's failure to encourage children to participate and engage regarding their digital lives in policy making.

- Effects of parents blogging and vlogging about their own children were discussed.

- An older government representative expressed distaste of children spending leisure time gaming suggesting these involved violent content.

- NGOs highlighted increased incidences of girls' confidence to express themselves in online contexts versus in person contexts.

KOREA

- Stakeholders emphasised the need for children to learn to self-regulate access to remedy sedentary behaviours around screentime.

- Participants highlighted how the digital space is seen as another living space and how digital literacy places emphasis on skills of the individual, rather than conceptualising the internet also as a space for societal discourse and engagement.

- Stakeholders noted Korean digital education was moving away from a focus on digital literacy to a more holistic focus on citizenship.

- Shifting perspective towards videogames by looking at games from a functional and not a dysfunctional perspective was called for, and how this could be beneficial to areas of competency.

- Exploring differences in gender preferences for videogames would be valuable.

AUSTRALIA

- Australian academic participants highlighted too great a focus on the "low end of the harm continuum".

- Stakeholders noted how children conceptualise things differently from adults emphasising a need for greater child contributions.

- Stakeholders called for programs of education or resources that offer a gradual release for children into digital environments.

- Stakeholders argued for a need to encourage parents to talk to their children about their online lives.

- Australian stakeholders discussed how Australian adults also have poor media literacy hence some may not be in the position to educate children most effectively.
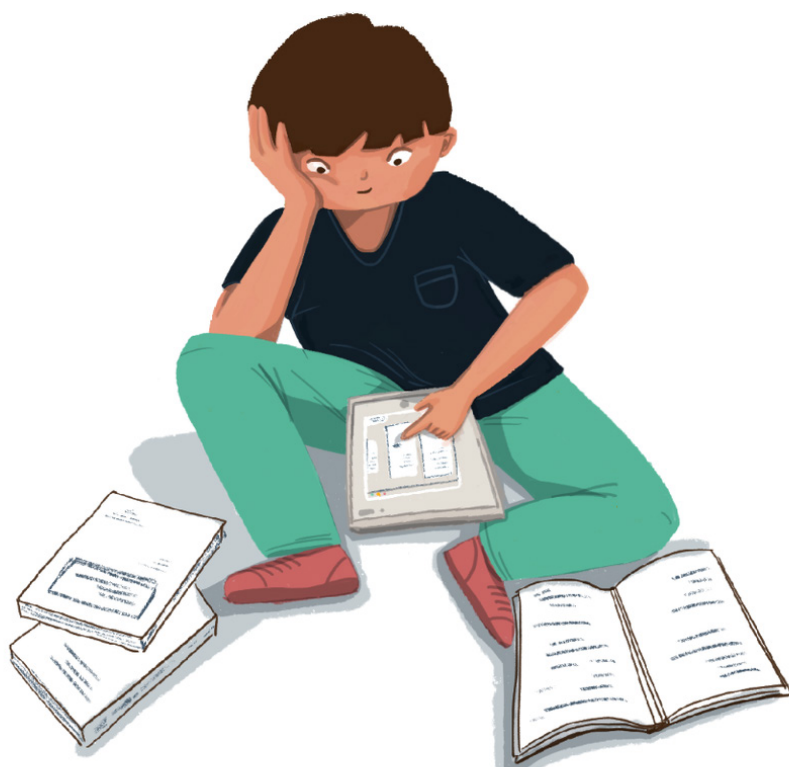
Illustration: Phoebe Hui Zeng

4A PRINCIPLES OF STAKEHOLDER ENGAGEMENT SUPPORTING CHILDREN'S DIGITAL CITIZENSHIP

Statement of phase four (b) research question

Research phase four (b) built upon the synthesis of data and literature from all preceding phases of the project in order to arrive at final findings in response to the project's last research question:

> *How might policy makers and industry partners interact to better support the development of digital citizenship skills in young children, and how might children's views be incorporated in any model for stakeholder engagement?*

Analysis and synthesis of *all* data (scoping literature review, children's roundtable transcript and parent survey data, and adult roundtable transcript and survey data) produced the finding of four main principles to inform an approach to supporting children's digital citizenship:

<div align="center">

ATTITUDE

ABILITY

AWARENESS

ACCESS

</div>

In relation to these four principles—**ATTITUDE**, **ABILITY**, **AWARENESS** and **ACCESS**, which we will hereon refer to as 4As—four corresponding key recommendations are made in this document, along with a fifth recommendation related to the call for unified approaches to children's digital citizenship. Together, these five recommendations offer adult policy and practice stakeholders' direction in how they might better communicate and facilitate effective digital citizenship development.

4A principles design

These 4A categories overlap and exert varying levels of influence over each other. To assist in conveying this sense of reiterative process, a visual framework design has been used to communicate these messages. The 4A design is an adapted cyclical process model, drawing its influence from process cycles similarly used in educational contexts, such as the Action Research Cycle, first attributed in the mid-twentieth century to educational researcher Kurt Lewin (1946). Visual models like these serve as visual tools to identify relationships between concepts, actions and/or concepts.

In its origami chatterbox mode, the cycle model is intended to be non-hierarchical, and convey a constant sense of motion and influence, from wherever the user chooses to begin. This cycle is illustrated in 'Figure 2' below. However, when viewed in this way, the natural progression most likely begins at the top of the diagram (**ATTITUDE**) and moves through the cycle in a clockwise direction (**ABILITY**, **AWARENESS** and **ACCESS**). Therefore, for simplicity and clarity, the 4As will be unpacked in this order, and discussed firstly in a linear cycle of how supportive attitude builds ability, creating awareness, facilitating access, and so on.
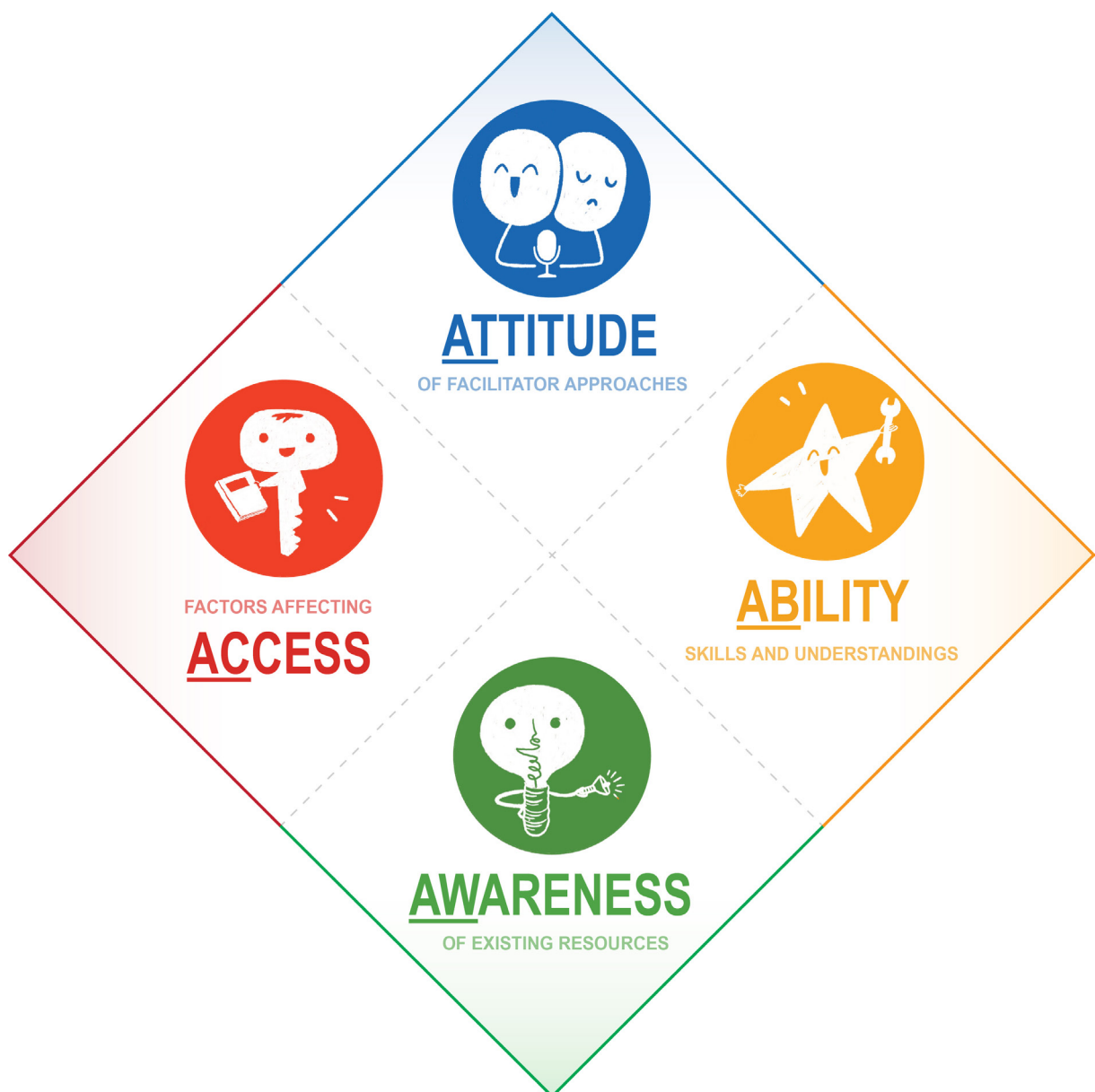

Figure 2: Base models of stakeholder engagement principles

ATTITUDE

OF STAKEHOLDER APPROACHES SUPPORTING CHILDREN'S DIGITAL CITIZENSHIP

The principle of '**ATTITUDE** (**AT**)' may be defined as facilitator attitudes and approaches toward children's competencies, digital engagement, and some stakeholders' pervasive beliefs in online/offline and protectionist modes of modern digital living.

The principal of **ATTITUDE** may be broken down into three sub-categories:

AT[1]   attitudes of stakeholders toward digital devices and platforms

AT[2]   attitudes of stakeholders regarding children as active, competent participants with rights

AT[3]   attitude of stakeholders toward digital engagement beyond binaries of offline/online, good/bad, or risky/safe

AT[1] — ATTITUDE of stakeholders toward digital devices and platforms

A point reiterated in all countries was the call for large platforms and corporations to do more, and be more transparent, regarding their data collection practices, as well as a greater light shone on the way algorithms work, particularly how this might influence a child's interaction with products. Another point drawn upon was a focus on quantity (screentime) rather than quality (what the child is actually doing on said screen). What constituted quality was a point of some conjecture in groups, as some participants still felt video games had little to offer children, whereas positive discussion here indicated the kind of game being played, and that many games had sophisticated narrative structures and game worlds that necessitate more advanced problem-solving behaviours by gamers, citing the example of Minecraft and The Legend of Zelda. Many participants acknowledged that generally children's media cultures aren't taken seriously enough and argued that adults in particular needed to acknowledge the important identity formation practices taking place in many online activities; for example, when children create content such as videos and vlogs, their sense of achievement when gaming, and their curation of social media profiles.

AT[2] — ATTITUDE of stakeholders regarding children as active, competent participants with rights

Many adult roundtable participants criticised overly protectionist parental and educational approaches toward devices and platforms that severely restrict children's access. Some argued teachers were constrained in their potential guidance of students' use of chat features and profiles when these occur in school settings, as they feared parental recrimination. In this respect, this indicated there is a need for more confidence-building for parents/guardians. Also needed are greater understandings around the need for children to have exposure to elements of mild risk, and corresponding opportunities to exercise self-regulation and judgement around risk. Participants argued for more support for teachers to assist children in non-school digital activities which had the potential to support the building of important digital life skills like appropriate language in messaging and emails. This, in turn, prepares them for confident digital use as young adults entering more sophisticated social spaces, further education, and the workforce. The phrase 'safe spaces' came up in this context; metaphorically speaking, these are places at school or at home where children feel like they are free to express their experiences on digital platforms and choose possible solutions to problems without fear of retribution. All participants agreed digital access and safe spaces were a child's right, and that confidence in children's competencies was underestimated and needed to be reinforced in order to build resilient behaviours in young users.

AT[3] — ATTITUDE of stakeholders toward digital engagement beyond binaries of offline/online, good/bad, or risky/safe

A point returned to often by adult roundtable participants in each country was the tendency for there to be outmoded dual perceptions of on and offline worlds, whereas for today's children, the presence of digital technology—particularly as means of daily communication—is ubiquitous. Another interesting example offered was that, in this modern world, a child's digital avatar and experience is an extension of their physical experience, and that children need to understand the implications of these extensions as much as adults do. Binary perceptions such as risky/safe by adults hinder the development of children's awareness and agency in these enmeshed digital extensions. Adult participants added that many protectionist modes of thinking stem from binary attitudes toward online and offline activities, with a distinction constantly drawn by many adults between positive activities (being offline) and negative activities (being online). They suggested, in actuality, restrictive attitudes aren't preparing children for current reality nor preparing them for the future advancement of technology and daily life. Multiple stakeholders expressed that, rather than predetermining for children risk or safety through often extreme examples, children should instead be supported and encouraged to articulate and reflect on their experiences in a way that develops their critical thinking and self-regulation. Stakeholders expressed that digital spaces inherently offer a mixture of risks and opportunities, and that building children's resilience, adaptability and critical thinking is a better long-term approach.

ABILITY

SKILLS AND UNDERSTANDINGS SUPPORTING CHILDREN'S DIGITAL CITIZENSHIP

The principle of '**ABILITY** (**AB**)' may be defined as building both children's digital skills (including digital literacy, safety, and privacy) but also abilities as empathetic, discerning, and socially responsible digital citizens.

The principal of **AB**ILITY may be broken down into three sub-categories:

AB[1]   digital literacy abilities and skills

AB[2]   ability to show empathy, social responsibility, and community connection

AB[3]   media literacy abilities including critical thinking skills, privacy skills and protective practices

AB[1] — Digital literacy ABILITY and skills

All stakeholders agreed that building digital skills equated to building fundamental modern life skills. Acknowledged were challenges in individual access to devices and internet plans (indicating digital divides) as well as mediation from external sources disproportionately effecting some children; for example, girls' access in India. In other countries, girls' high ability and involvement in STEM areas as students was discussed, but that there is a lack of follow through in these areas later in life and into employment. Discussion involved encouraging competency across digital literacy for all children so that negative forces were less able to exploit vulnerabilities in less tech-savvy individuals, and so that all children had the opportunity to succeed in the future modern workforce and be confident contributors to society and community. Adult stakeholders agreed there needed to be more cross sector cooperation to develop children's digital abilities, as well as more consistent curriculum focus on teaching general digital skills, and that assistance for adults (such as parents and teachers) was also an ongoing important necessity.

AB[2] — ABILITY to show empathy, social responsibility, and community connection

The need for children to develop competencies concerning connection, collaboration, self-expression, and how to ethically and responsibly play with others online was acknowledged in all countries. Along with this acknowledgement was adults' tendency to underrate children's media cultures despite the fact that digital spaces have become significant contributors to children's community engagement, especially since pandemic related isolation. These skills were often associated with social media and online gaming platforms. Risks notwithstanding, these platforms were identified as opportunities for children to develop and express a sense of identity, seek out and experience camaraderie with likeminded peers possibly not accessible in the offline world, as well as an extension of a child's citizenship into digital spaces. Multiple stakeholders expressed that building these specific skills and abilities was important to augment senses of developing confidence and identity, with the added benefit being a reduction in the likelihood of children developing anti-social behaviour online. Although stakeholders suggested that children are often already socially conscious, they still expressed the importance for facilitators (for example, parents, teachers, industry platforms) to model these skills and abilities.

AB[3] — Media literacy ABILITY including critical thinking skills, privacy skills and protective practices

Following on from a focus on the important opportunity for building basic digital literacy and skills, was the safety by design approach with a corresponding advocacy for children being supported to understand how to engage with technology responsibly from the very beginning. Understanding concepts such as data harvesting and collection, and how algorithms have the potential to influence how and why children might access particular things was stressed in all countries. It was deemed essential for all individuals—but particularly young people—to build abilities to maintain levels of 'digital hygiene' (a term proffered in India). These abilities could include such strategies as turning off or limiting location devices in apps, limiting access within social media profiles, the ability to independently report incidents of concern such as cyberbullying or harassment, as well as building children's confidence in their ability to self-regulate and manage screentime and content. Stressed highly by adult roundtable participants was concern regarding media literacy and other abilities children were still developing, such as understandings around senses of truth, and the ability to discern less extreme but nevertheless concerning material that may be offensive, such as racist, misogynist, or anti-social material. Children needed assistance in developing the ability to be critical and challenge the source and intention in the content they are exposed to.

AWARENESS
OF EXISTING RESOURCES SUPPORTING CHILDREN'S DIGITAL CITIZENSHIP

The principle of **AWARENESS** (**AW**) may be defined as both stakeholder and children's awareness of formal and informal resources available that support digital citizenship, including training.

The principal of **AWARENESS** may be broken down into three sub-categories:

AW[1]   awareness of existing resources supporting digital citizenship

AW[2]   awareness of facilitator training supporting digital citizenship in formal and informal settings

AW[3]   awareness of stakeholders from varying backgrounds/foci sharing materials supporting digital citizenship

AW[1] — AWARENESS of existing resources supporting digital citizenship

All stakeholders discussed the importance of quality resources, and generally agreed that it was not a matter of a lack of resources, but rather a need for greater awareness around their availability. Generally, stakeholders agreed that gaps here were in informal settings, particularly a deficiency of parent/guardian awareness of resources available to them and independently to their children. Education curricula were also criticized, variously for a lack of cohesive approach, lack of common terminology, and the ad hoc approach to implementation.

AW[2] — AWARENESS of facilitator training supporting digital citizenship in formal and informal settings

All stakeholders expressed that access to evidence-based stakeholder training was paramount in both formal (education) and informal (home) settings. Although training for children and parents/guardians was deemed important, the notion of stakeholder training was generally discussed in the context of teacher-education, with teachers acting as children's primary facilitators. However, as children matured, programs similarly shifted to target children directly, rather than their teachers and parents/guardians.

Many sophisticated resources exist that take children's varying maturity levels into account, but educators need assistance to navigate grey areas of children's digital lives (for example, cyberbullying or sexting) that often encroach into children's offline contexts, including at school. All countries agreed that training concerning digital spaces needed to be ongoing in order to maintain efficacy. In response to the notion that digital spaces evolve rapidly, multiple stakeholders expressed that progress didn't mean identifying one 'right' solution or set of principles. Yet, in contrast, frustration was felt at a lack of cohesive and coordinated approach to training. Together, these contrasting perspectives indicated challenges in global approaches to training that also consider cultural nuance.

AW[3] — AWARENESS of stakeholders from varying backgrounds/foci sharing materials supporting digital citizenship

All stakeholders agreed that the current focus of most digital citizenship material comes from protectionist viewpoints. Although all acknowledged digital safety is crucial, adult roundtable participants indicated that overly protectionist approaches discourage fair access and discussion around children's developing media cultures. They suggested this may also obscure the development of self-regulating and resilient behaviours, such as critical thinking processes in young people's media literacy and senses of what truth is online. Acceptable elements of risk-taking and an understanding of children's' tendency to test boundaries and experiment were acknowledged. Stakeholders stressed the importance of educators, governments, rights advocates, media companies, and children maintaining an awareness of each other's concerns and that they collaborate wherever possible. Although some NGOs discussed partnerships they had with gaming and/or social media platforms that encouraged responsible use and supported digital citizenship development activities, members of the gaming industry were not present in our roundtables. However, the importance of gaming and gaming culture and the skills they enable and cultivate in children were mentioned by participants in each roundtable. In Korea, one participant pointed to gaming as a means to make connections with young people and what they described as 'digital fluency', and how this may relate to aiding digital literacy development amongst young people. Gaming culture was described in India as being essential to building senses of achievement and skills amongst young people. In contrast, stakeholders across all countries stressed their view that some large platform providers' failed to provide effective oversight and regulation in terms of content mediation and data harvesting practices, which in turn creates mistrust amongst users and perpetuates gatekeepers' adherence to more protectionist stances. In Australia, one participant mentioned that if coordinated approaches were taken, and knowledge, skills, influence and funding were leveraged across different stakeholders, then broader aims relating to digital citizenship approaches would be more effective and achievable.

FACTORS AFFECTING
ACCESS
SUPPORTING CHILDREN'S DIGITAL CITIZENSHIP

The principle of **ACCESS** (**AC**) may be defined as a focus on factors affecting children's physical access to devices and the internet, as well as their access to participation in decision-making processes that support their digital citizenship.

The principal of **ACCESS** may be broken down into three sub-categories:

AC[1] access to child-centred terminology and materials

AC[2] mediated access including culturally specific mediation or gender expectations, access affected by financial inequality (digital divide), or generational/age gaps

AC[3] children's access to participation in decision-making

AC[1] — ACCESS to child-centred terminology and materials

All countries' participants acknowledged the need for access to child-centred terminology and materials, as well as the challenge and need for terminology that keeps pace with the evolution of digital spaces. The benefits expressed by stakeholders of this approach were numerous. A unified approach to language that traversed perceptions of online and offline worlds was seen to breach the generation gap in attitudes between older generations (for whom technology was not ubiquitous as children) and modern children who, by contrast, see one as an extension of the other. As such, a unified approach could also serve to solve misalignment problems discussed by several stakeholders, who argued that children conceptualise many things differently to adults, particularly their perceptions of what constitutes appropriate behaviour, including language and humour. This all-inclusive, thoughtful approach to children's evolving literacies and abilities additionally serves to empower children and adults by bridging generation gaps and assisting mutual comprehension for both groups. In this respect, children were seen as empowered individuals capable of assisting their peers and older members of their families and communities. All-inclusive terminology in a unified approach serves to bring about consistency in global or regional terminology and may deter some platforms who support child audiences from applying inscrutable language that may not foster transparency around data collection and access.

AC² — Mediated ACCESS

As well as stakeholder discussion concerning access being focused on generational gaps between children and their facilitators, there were also discussions around social and gender inequality. Mediation arises in all aspects where children are involved, for example, a parent's facilitation of sporting or social activities. In digital spaces, the location and kind of access is influenced by many factors including informal (for example, home) and formal (for example, school) settings, how many devices children have access to, who mediates and influences their freedom of expression and behaviour in these places, and age limits for participation on platforms. Stakeholders recommended an approach boosting girls' access to freedom of expression in online spaces, which may contribute to girls' uptake of digital technology and STEM that could flow on to future spaces beyond childhood contexts (such as to employment opportunities and career development).There were many discussions about the difficulty schools have around general digital engagement of children, such as chat, social media participation and gaming, which aren't considered school activities. Some stakeholders described educators' reticence to enter discussions about children's personal digital engagements, although they did identify that some children need guidance in these areas, and some were perhaps not receiving this in home contexts. Numerous stakeholders argued that they interact with many young people eager to discuss their experiences with no recourse usually to do so, and little opportunity to unpack the nuance of their personal experience beyond purely protectionist or digital literacy-focused approaches to their digital citizenship education. Stakeholders nominated that building teacher confidence in these areas was key, so that teachers may work in tandem with students and parents/guardians to provide tools for safe and informed digital participation. The need for adults (particularly parents/guardians) to have a more 'quality versus quantity' approach regarding screentime in activities was also raised.

AC³ — Children's ACCESS to participation in decision-making

Involving children in decision-making processes was discussed by all stakeholders, contextualised by the need to balance children's rights and responsibilities as digital citizens with their need for guardianship and guidance. Variously, stakeholders concentrated on children's rights to access, and the agency-building and empowering effects of policy and platform caretakers to meaningfully engage with child-audiences and their experiences. Many Edtech and NGO representatives in particular stressed children's desire to talk about the intricacies of their digital engagements, and that there are current gaps in children's access to discussions that impact on their own digital citizenship development. Complexities in these discussions included the need for leadership opportunities for primary/elementary school-aged children who have the desire to contribute but still need guidance from gatekeepers, and how to support student agency within school contexts. Practical approaches to education were expounded upon, along with the need for a coordinated, 'control tower' approach that allotted responsibility and contributions to representatives equally across government, NGOs and industry, but also included child representatives.
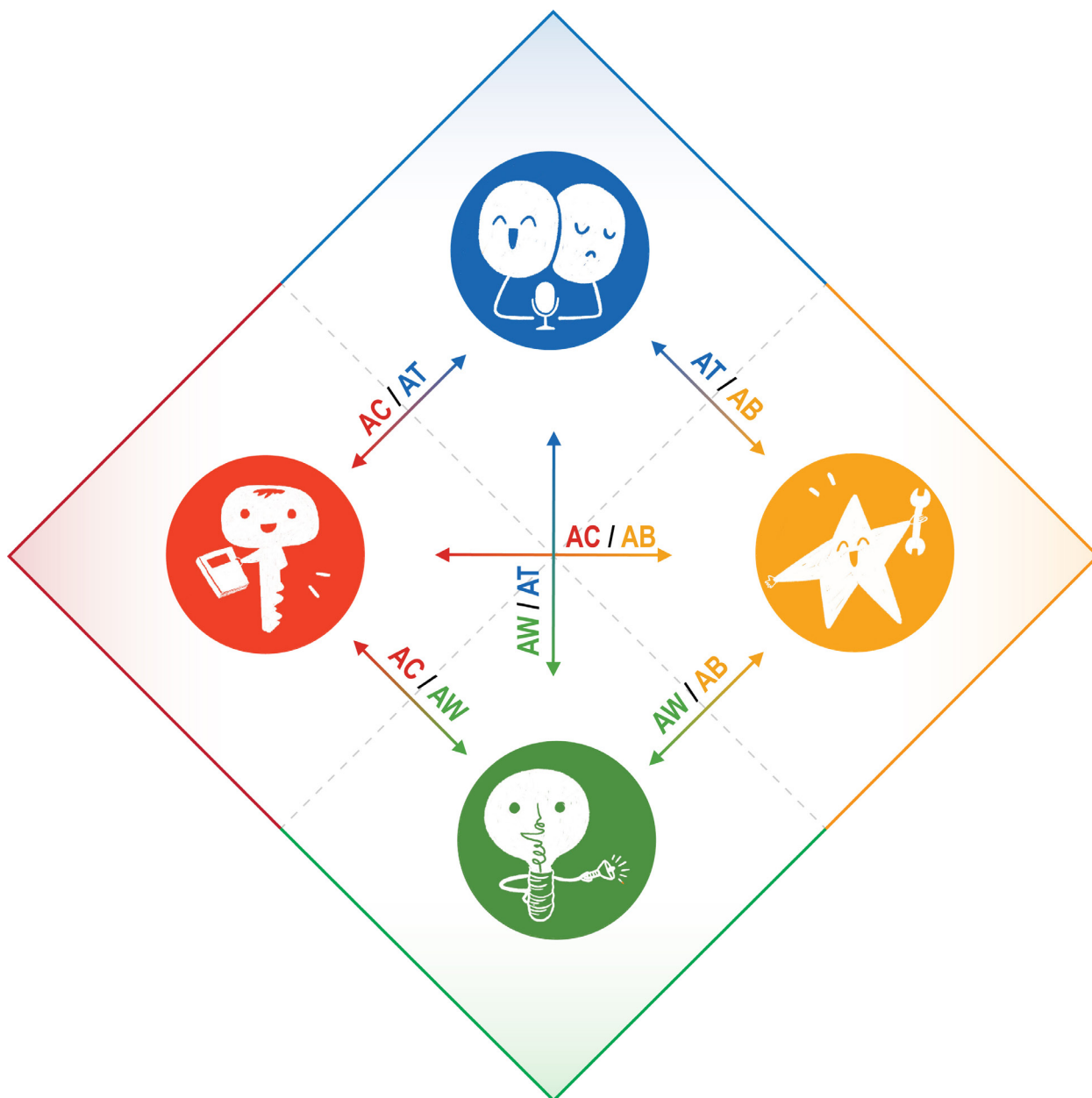
A model of stakeholder engagement principles

Figure 3: 4A extended model of stakeholder engagement showing movement between principles

Interactions between 4A elements

The following sections discuss the interaction between the 4A elements as illustrated in Figure 3.

ATTITUDE / ABILITY

A recurring theme within discussions was how overly protectionist **ATTITUDES** toward digital engagements may be hindering children's **ABILIITY** to mediate conflict and navigate elements of danger and risk online. Discussion highlighted how a change in attitude toward less protectionist modes of engagement may enable a child's ability to react and navigate danger or risk appropriately (when equipped with the right tools and education to do so), therefore building resilience and ability in conflict resolution and relationship management. This point was most aptly summarized by an example offered by Joel in Australia, who expressed frustration with protectionist attitudes leaving children who are around the age of 13 to fend for themselves as they come to the age of having (legal) access to social media platforms by expecting them to progress from "novice to master in 12 months". This resilience-building approach is supported in other recent prominent research and literature. (See, for example, Livingstone & Pothong, 2022; Livingstone & Stoilova, 2021; Stoilova & Livingstone, 2023).

ABILITY / AWARENESS

Gatekeepers must have an **AWARENESS** of the importance and positive affordances of children's media cultures for **ABILITY** growth of online activities such as gaming and content production. Required awareness that modern children's digital play is not necessarily a timewasting activity, and that many games have sophisticated and intricate storylines that are both fun to play and contribute to developing abilities (such as literacy, problem-solving and empathetic behaviours) was an important point touched upon in all three countries. Specifically in India, some apt examples were given by adult roundtable participants who discussed their own parents' lack of awareness around the capacity-building that much of their own online engagements engendered. Participants discussed how important gaming activities were to children's senses of achievement and identity-building, and that gatekeepers were not often aware of how important these senses were to today's children.

AWARENESS / ACCESS

An **AWARENESS** of local barriers and divides inhibiting **ACCESS** for digital citizenship development is essential, particularly in relation to the need for culturally and linguistically nuanced resource materials and approaches for diverse global audiences. To enable a fair and equitable system in which all children may participate, a more diverse range of perspectives in approaches to digital citizenship by industry, academia, government, and NGOs must be embraced, not just those that reflect the concerns of the global north. Yet, calls for global terminology were made, whilst also acknowledging the need for cultural nuance.

ACCESS / ATTITUDE

Participants argued prevailing **ATTITUDES** of gatekeepers that severely inhibit **ACCESS** may be putting children at greater risk in terms of safety and privacy (inhibiting skills development), but also in terms of their social well-being and access to friendship networks. Such protectionist attitudes can prevent children from access to positive social networks, relationship building and the meaning-making that positive online interactions with others may grant. One adult roundtable participant in India spoke of how lonely their children were during the pandemic, indicating how they and other parents had changed their attitudes toward online interaction at this time due to the social networks accessed and the positive flow on effects it had in their childrens' lives. Inhibiting attitudes could also impact access to future employment opportunities and participation in many government services as these move to solely online means. Participants in Australia discussed the issue of parents and guardians who severely curtail access to online learning platforms, devices and services, creating enormous difficulties for children in current and later life. Access to basic digital literacy skills such as creating documents and word processing, participating in online learning sessions, and later life access such as logging in to government portals and online banking, were seen as essential to position children for success as future adult citizens.
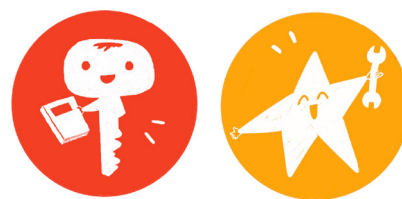
ACCESS / ABILITY

There were many instances discussed in the roundtables regarding the skill and **ABILITY** development that adequate **ACCESS** to the internet and devices enables. Participants discussed how supervised (for the very young) access, informed access, and less mediated access to online spaces can have very positive flow on effects in many children's lives. There were many instances where participants discussed their own skill development on platforms both as young people and as adults. Aside from the general digital skills discussed previously, this included leisure time spent creating music, using photoshop, making YouTube instructional videos, and gaming. Though these were accessed for leisure, participants felt these still built complementary abilities and digital capacities which greatly contributed to their own senses of identity and achievement, especially when given the opportunity to let their imaginations have free reign to create and socialise. One Indian participant related how they had tried and failed to teach their son to tie his shoelaces and had eventually turned to YouTube as a successful learning source. From a basic ability like this to sophisticated digital game play skills spilling into children's real-world play, discussions from all three countries related multiple positive affordances of digital access ranging from educative to leisure activities.

ATTITUDE / AWARENESS

Many participants noted the danger of **ATTITUDES** laying the onus of responsibility solely at the feet of educators. They called for greater **AWARENESS** amongst all stakeholders of the responsibility of gatekeepers, including in informal (home) settings. They also indicated an expectation of responsibility and accountability by major corporations and platforms. Participants stated that these companies must do more to develop children's digital citizenship and protect their rights, including the effective mediation of platforms they are engaged in that have the potential for user abuse (especially in terms of CSAM, hate speech and bullying), as well as more transparency around data collection and use of algorithms. One Australian participant voiced concerns around the rise of Edtech (especially since the pandemic) and the potential for data harvesting abuses within the education realm as legislation struggles to keep pace with technical advances in this industry.
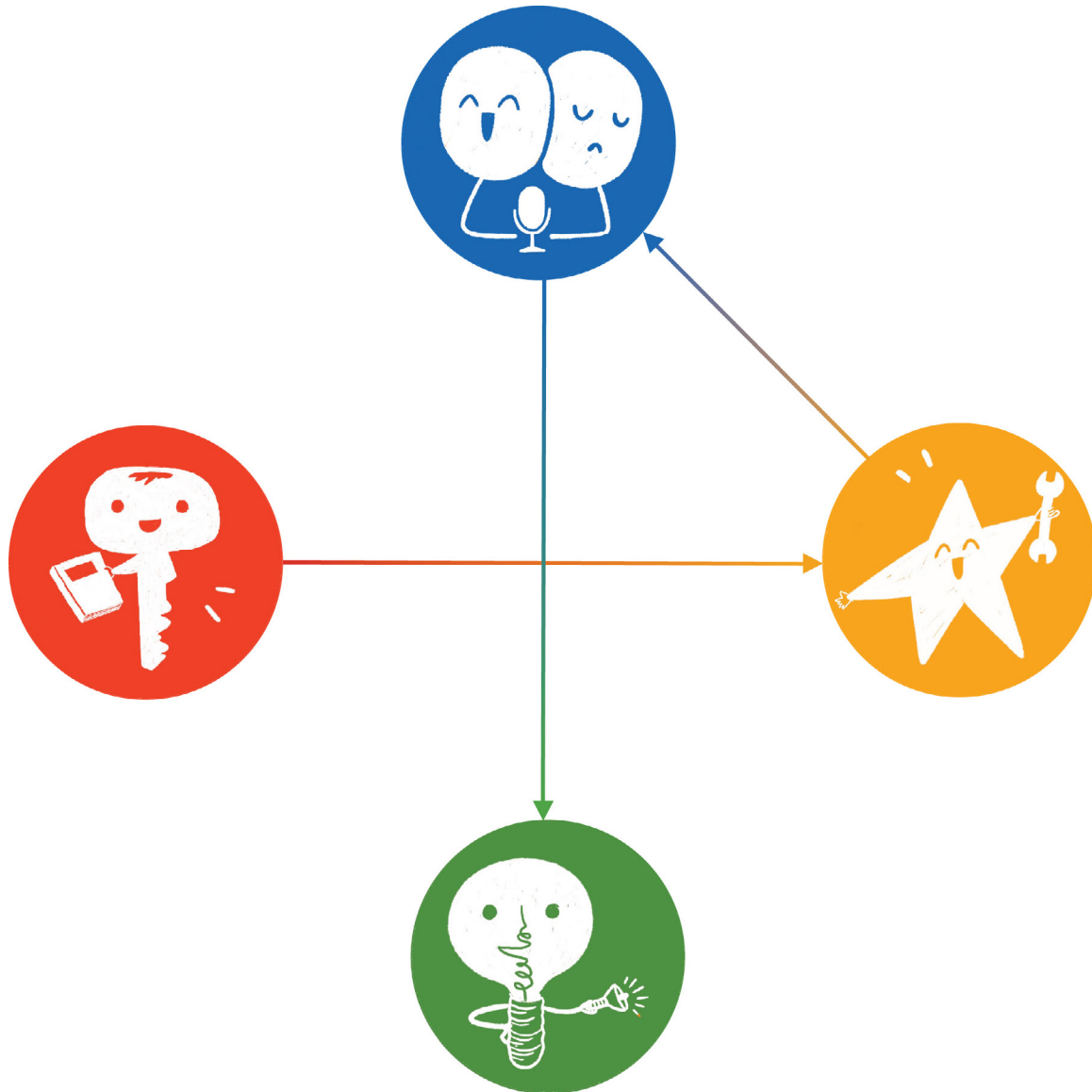
Figure 4: Possible iteration #1 moving between 4As of stakeholder engagement

Scenario 1: ACCESS a child has to a video game with a distinct narrative or problem-solving focus increases child's **ABILITY** such as their digital literacy and skill level, which in turn changes the guardian's **ATTITUDE** toward gaming activities and increases their **AWARENESS** of sophisticated online games building digital citizenship skills.
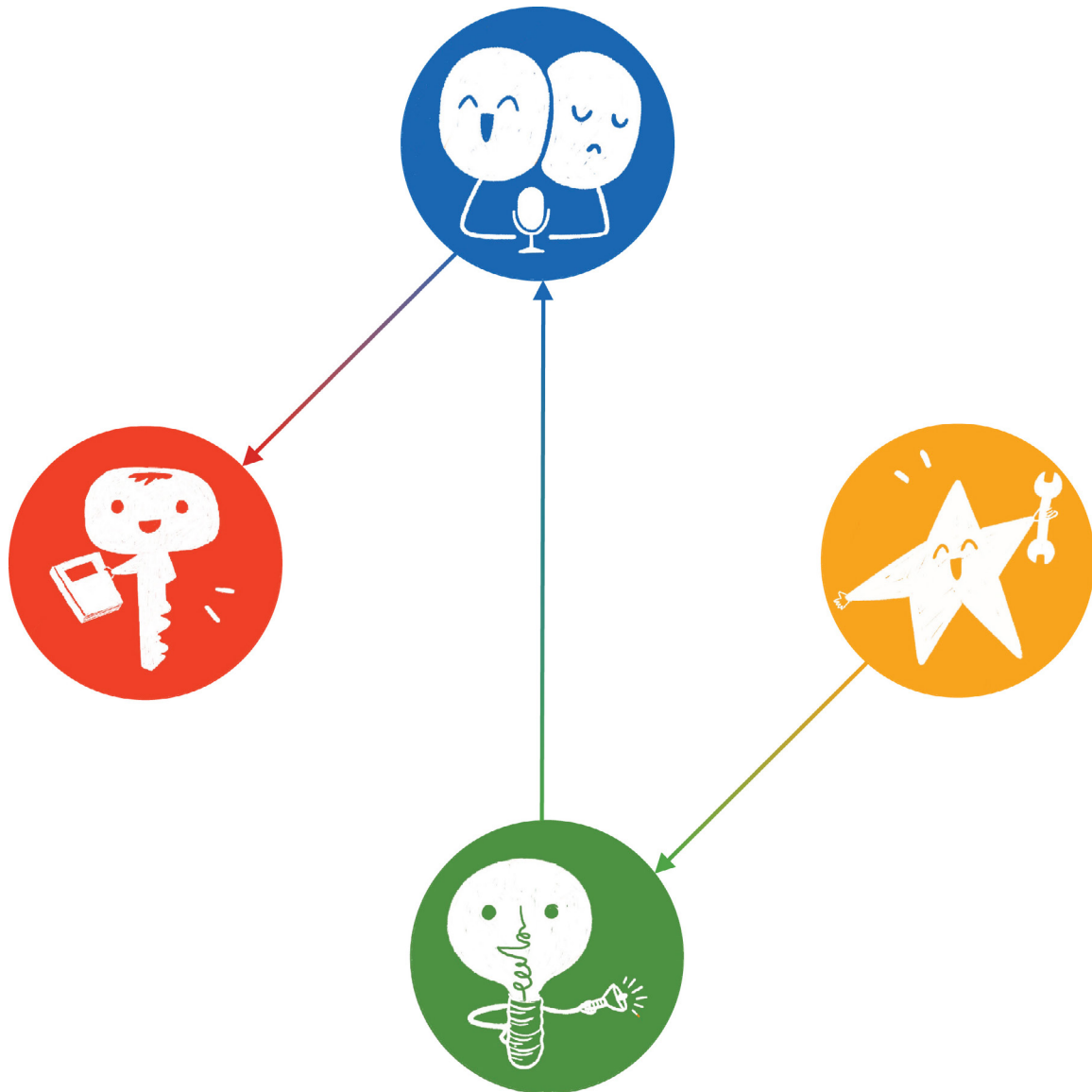
Figure 5: Possible iteration #2 moving between 4As of stakeholder engagement

Scenario 2: ABILITY a guardian has to utilize search functions on a computer leads to an **AWARENESS** of a digital skill support resource such as the eSafety website, which in turn further builds **ABILITY** through tools and resources, changing overly protectionist **ATTITUDES** towards their child's **ACCESS** to digital platforms.

4A MODEL OF DIGITAL CITIZENSHIP STAKEHOLDER ENGAGEMENT

Recommendations for future model of stakeholder engagement

Evident in the purposefully diverse tri-country approach of this study is the importance of developing approaches to digital citizenship that acknowledge both the global north and south, those that are "grounded in the lived realities of children" and "reflect their lifeworlds" (Bhatia & Pathak-Shelat, 2019, p. 260). All of our pre-roundtable surveys and discussions with adult stakeholders indicated dual frustration with non-global and inconsistent approaches to digital citizenship, nomenclature in particular, whilst acknowledging that said approaches may ignore important cultural nuance and diversity. These somewhat contradictory statements require thoughtful and creative solutions if a cooperative and respectful balance can be struck and unified approaches to digital citizenship have the opportunity to succeed.

Evident to researchers was the willingness by adult stakeholders to be inclusive of children's points of view. This overwhelmingly positive finding—the affirmative stance and attitude toward inclusivity of children's voices—should not be underestimated. In putting forward recommendations for an effective model of stakeholder engagement, each recommendation includes both adult and child participation, grounded in existing successful practical approaches. This suggests inclusive concrete ways forward supporting digital citizenship development.

Purposeful within these recommendations is the necessity to communicate by speaking the language of the digital child. In modern contexts, this should be primarily though digital dissemination. Developing the 4As of children's digital citizenship should primarily take place through digital means, for it is within these platforms that a wider child audience may be reached more effectively, and it serves to promote increased interaction of older generations with young people via more vibrant, engaging, and fun digital means.

As the recommendations involve the synthesis of both children's and adults' perspectives regarding digital citizenship, the 4As (and their sub-categories) are useful lenses through which stakeholders may position their own approaches to education or development approaches. Furthermore, the following five recommendations proceed directly from each of the 4As and are an apt demonstration of a way to apply each of these lenses.

The following recommendations draw upon the 4A principles in a model that emphasises each area of appointed relevance: Attitude, Ability, Awareness and Access, with the addition of one central recommendation that addresses and encapsulates all 4As together. They are as follows:

1. **<u>AT</u>TITUDE: Digital Play Spaces in libraries or community centres focusing on digital citizenship for families**

2. **<u>AB</u>ILITY: A Digital Officer in each school**

3. **<u>AW</u>ARENESS: A humorous social media / TV campaign**

4. **<u>AC</u>CESS: Digital Citizenship Child Advisory Body**

5. **4As: Control Tower for Digital Citizenship**

Illustration: Phoebe Hui Zeng

Five Recommendations in detail

1. <u>AT</u>TITUDE: Digital Play Spaces in libraries or communitiy centres focusing on digital citizenship for families

Digital Play Spaces in local libraries or community centres are recommended for the purpose of expanding discourse from a focus on risk to that of risk balanced with positive affordances of digital technology, particularly so this knowledge can be transferred to informal (home) settings. Such spaces would offer opportunities for parents/guardians/ seniors and children to interact together in controlled Digital Play Spaces. Adults could share in children's worlds and children could feel empowered to share their means of digital expression with their families. This suggestion could also extend to a nominated program of activities to be performed in the home, should families have the means to do so. The recommendation nominates libraries and community spaces so that the process be more democratic for resource poorer families.

The concept of this suggested Digital Play Space draws upon Makerspace theory and practice, which Willingham and Boer describe as "DIY (do-it-yourself) spaces where people can gather to create, invent, and learn" (2015, p. 1). There have been some excellent and innovative examples of the Makerspace concept being adapted for the development of young people's digital skill building, the most recent and noteworthy being the *Makerspaces in the early years: Enhancing digital literacy and creativity* (MakEY) project, led by Professor Jackie Marsh at the University of Sheffield from 2017–2019 (MakEY, 2020). Funded by an EU Research and Innovation program, this project involved creative play-based makerspaces designed to develop children's digital skills and abilities in the areas of creative design and fabrication labs and enabled children to "explore, take risks, reflect and problem-solve, important skills and attributes for the age of the fourth industrial revolution" (Marsh, 2019, p. 79). Marsh argues further that "makerspaces emphasise collaboration and sharing" (2019, p. 79) and this provides an excellent basis for spaces for families to engage in fun digital activities and build each other's knowledge of the positive affordances of digital worlds.

For home-based Digital Play Spaces, good free exemplars include the LEGO Group's production of several free, useful and vibrant easy to play games designed for families to engage with together, including Smart Dash (The LEGO Group, 2023b), Gloom Busters (The LEGO Group, 2022), and their Doom the Gloom webpage (The LEGO Group, 2023a).

These include many links to helpful and fun activities, videos and resources surrounding digital safety and fun online. A parent guide on how to apply these to establish a home Digital Play Space would be a welcome addition. The ARC Centre of Excellence for the Digital Child (2023) also have dedicated child technology spaces at their partner universities, the University of Wollongong, Queensland University of Technology, and Curtin University. Whilst primarily utilized for ongoing research projects, these Digital Play Spaces also host regular public events providing exemplars of digital set ups and facilities, as well as excellent opportunities for research-informed, interactive family digital play activities.

Some examples of Digital Play (or DigiPlay) Space activities for families may include:

- Family gaming spaces where families learn about popular games their children play.

- Social media spaces, where families view and create profiles and/or content together.

- Text and app messaging, using emojis (and learning their meanings), using GIFs and sharing photos.

- YouTube, YouTubers, and how to create content and videos.

NGOs working closely with industry (particularly gaming and social media platforms) could lead the way in this area. Venues such as libraries and community centres would also involve a degree of local government cooperation. Leveraging successful existing NGO/industry partnerships and networks would be the starting point for a coordinated move to Digital Play Spaces.

2. <u>AB</u>ILITY: A Digital Officer in each school

In modern contexts, much attention has been brought to supporting the mental well-being and pastoral care of students in education settings globally. This is a promising development for the general well-being of students, and it is our suggestion that this duty of care in education settings could also extend to children's digital lives via a designated and dedicated specialist Digital Officer. As the eSafety Commissioner's report *Online safety: health, education and law enforcement workers* (2021) report aptly describes, frontline workers like teachers are often placed in situations where they encounter individuals with digitally based issues in education, health or law enforcement scenarios. eSafety Commissioner research found that "there were a number of systematic barriers that [education] participants faced when assisting their clients with online safety. These included a lack of knowledge of online safety issues and a lack of access to resources" (2021, p. 3).

From this research and from what many adult stakeholders discussed in the roundtables, it is clear that education curricula are already very full, and frontline workers such as teachers (as well as parents) often feel disempowered or overwhelmed to tackle issues regarding the multitude of children's online entanglements. A specialised Digital Officer would relieve much of this pressure and provide up to date, tailored help and support to teachers, parents, and students alike.

This person is similar to a chaplain or school psychologist position in a school (not a teacher) and is someone who:

- Builds competencies in all areas of digital citizenship.

- Creates materials and hosts workshops.

- Liaises with parents and teachers.

- Works with the student council to upskill them and promote student leadership.

This recommendation would require a role for government to play, liaising with schools as to a coordinated approach to the role description and qualifications required for Digital Officers. Schools, Edtech and academia are readily placed to offer advice and research-based solutions in these areas. Consultation with NGOs and industry (especially Edtech) providers focusing on materials and resources regarding pertinent issues such as cyberbullying, protective practices and responsible technology use would also be encouraged.

3. <u>AW</u>ARENESS: A humorous social media/TV campaign

The purpose of this campaign would be to draw attention to existing resources for parents/kids/teachers/seniors in regard to developing their digital citizenship. To enhance awareness, we recommend enlisting the talents of a comedian, film, or television actor/actress or individual with a high digital profile such as a YouTuber or Influencer (ideally, relevant to a cultural context) to create a series of short informational videos for dissemination on digital and TV platforms. This would facilitate coordinated awareness of existing government or NGO platform resources designed to assist digital citizenship.

High quality, well-researched and helpful materials already exist that speak well to children, including humorous exemplars from the Canadian Centre for Child Protection or @ProtectChildrenCA (2018, 2023), Common Sense Education (2023) and Australian telecom provider Telstra (with comedian Jimmy Rees) (2021), Hutch/Vodafone India (with children and pug dogs) (2018), and SK Telecom commercials for voice activated assistant Nugu (featuring KPop stars BTS) (2022). The suggested format would be for this actor/or actors to roleplay a problem and solution scenario. Some examples may include:

- A child experiencing a bully whilst gaming.

- A senior wanting to learn how to use Facetime or WhatsApp.

- A parent needing help to discuss issues with their child.

- A teacher wanting an educative and fun lesson plan.

The solution and access to helpful resources available in that country would then be modelled. An awareness campaign would be primarily a role funded by government and collaborating with NGOs to promote awareness of available materials supporting ongoing positive digital citizenship development.

4. ACCESS: Digital Citizenship Child Advisory Body

A Child Advisory Body giving children a platform and voice to contribute to discussions regarding their digital citizenship is our recommendation from the synthesis of our data in the area of access. Relating also to our fifth recommendation (a Control Tower for Digital Citizenship), the Child Advisory Body would provide representation of important issues, advocate for change, celebrate achievements and talk about developments for children regarding their digital lives. It is envisioned that this advisory body would also have their own source of digital dissemination (their own website and/or YouTube Channel, for example) in order to create and circulate content such as videos, photos, and blogs.

There are many fine existing exemplars of child advisory panels including the Children's Parliament Scotland (2023), the eSafety Youth Council (2023), the Model UN, delegations such as the Blue Tree Foundation's Korean Youth Delegate at the UN, and recent youth voice activities facilitated by the LEGO Group including presenting youth perspectives of climate change to world leaders at the COP26 (UN Climate Change Conference of the Parties) held in Glasgow (The LEGO Group, 2021a). There are also many practical, research-based materials and resources produced by influential NGOs and academia promoting young people's participation in decision-making processes (Children, 2009, 2014; Department of Children, 2021; Kleine et al., 2016; Lansdown & O'Kane, 2014; O'Kane et al., 2020; Third, 2016), and rights based approaches to children's participation in digital spaces.

Returning to the point of the source of digital dissemination, the Digital Citizenship Child Advisory Body could produce (with the guidance of adults) engaging and positive digital citizenship and participation materials exploring all areas of digital citizenship including safety, privacy, gaming tips, making friends online, positive body imagery, sharing appropriate content and consent, mental well-being and so on. (This could be associated with recommendation 3, Awareness.)

This may be strengthened by:

- Creating a duo/group of vibrant and diverse young people to produce fun content.

- Leveraging the following of an existing popular YouTuber.

- Digital citizenship news reels with entertaining stories about digital world developments and youth.

- Question and answer segments about pertinent issues important to young people, backed up by thoughtful advice from children to children.

These would be positive and realistic ways to engage children and youth with issues pertinent to their digital lives, away from school environments, but still in educative ways. We envisage the Digital Citizenship Child Advisory Body being primarily a role for an NGO collaborating with an industry partner (such as YouTube, The LEGO Group or Meta) and collaborating with government to leverage access to decision-making processes and networks.

5. 4As: Control Tower for Digital Citizenship

In 2021, the United Nations *General comment No. 25 on children's rights in relation to the digital environment* brought vital global attention to the importance of children's rights to participate via meaningful access to digital realms in order to "support children to realize the full range of their civil, political, cultural, economic and social rights" (2021, p. 1). A unified body of representatives (including the Digital Citizenship Child Advisory Body) with this forefront in their minds, along with the vital importance of advocating through a unified and diverse approach to digital citizenship education and terminology, is our final recommendation to complete our proposedmodel of stakeholder engagement. This Control Tower would advocate for representation from the global north and south and model its approach on current exemplars of global cooperation, most notably the United Nations who have long successfully advocated for large-scale, issue-based conference approaches for awareness. Other examples include the Singapore-based Media Literacy Council (2023), and the recent formation of the Coalition for Digital Intelligence (CDI) spearheaded by the DQ Institute (2023) and supported by the World Economic Forum.

One example of an activity from such bodies includes the UN Transforming Education Summit (2022) in New York, a key focus of which was children's equitable and skill-concentrated access to digital technology, and this is an apt example of a unified global approach that focuses on an essential issue. Transforming Education also hosted a youth forum within proceedings and produced a youth declaration to the conference with contributions from youth all over the world. This also models an excellent approach to including children's voices within discussions regarding issues that directly affect them. Alternatively, the CDI is a unified group of professionals aiming to "set a global framework for digital intelligence, which includes a common set of definitions, language, and understanding of comprehensive digital literacy, skills, and readiness that can be adopted by all stakeholders worldwide, including national governments, educators, technology companies, and service providers" (DQ Institute, 2023). The ongoing aim of this promising model includes a more global approach involving governments, and representation from a greater cross section of stakeholders from government, academia, parents, educators, and child representatives.

Other impressive global initiatives by researchers from Global Kids Online (2023) and the UNICEF Office of Research-Innocenti (2023) point to model exemplars of cooperation across global north and south perspectives, along with recent industry-based examples of collaboration and cooperation with NGOs including the Asia-Pacific focused *We Think Digital* program spearheaded by Meta (2023).

The Control Tower approach must necessarily involve cooperation from all stakeholders, but most practically would begin with a high-level government and/or NGO approach to other relevant stakeholders, so that commercial interests of industry are balanced with other interests. Leveraging contacts across professional networks to include academia, industry, educators (primary/elementary and secondary), parents and child advisory body representatives would present the most comprehensive and balanced picture of representation, covering all aspects of children's digital engagements from all perspectives.

Conclusion

As Richardson and Milovidov argue in the *Digital citizenship education handbook*, "competent digital citizens are able to respond to new and everyday challenges related to learning, work, employability, leisure, inclusion and participation in society, and respecting human rights and intercultural differences" (2019, pp. 11–12). To do so, they first must be supported and empowered—particularly in early years—to develop the knowledge, skills and abilities to participate responsibly, and in the most effective ways in both formal and informal settings.

What this research project has highlighted is that despite the different geographical and cultural backgrounds of participants in this study, many commonalities unite them in their aims to support and safeguard young people's rights to participate and develop as digital citizens. Brought to the fore in discussions were frustrations surrounding pervasive overly protectionist attitudes of adult stakeholders, without enough focus on how to empower children better to develop skills and resilient behaviours around risks that will—in all likelihood—endure when children participate online as full digital citizens in the future.

Many high-quality resources and support mechanisms exist to support digital citizenship, but with conflicting agendas and rarely any cohesive approach to educational rollout, efficacy of many government and curricula approaches is variable. Children told us, and adult stakeholders reiterated these points, that along with the technical know-how to use the skills of digital citizenship, children need help navigating often complex scenarios involving friends, the appropriate use of imagery and sharing, learning to self-regulate usage, the ability to think critically about sources of truth they encounter online, and where to turn when they and their parents or teachers need help and advice. Stakeholders were united in their call for children to be better prepared when their developing and vulnerable minds were suddenly set adrift in the ocean of first smartphone usage, with all of the possibilities—positive and negative—this formative time in a child's life affords.

The recommendations set forth by this research study are practical, research-based solutions arising from direct participation with both children and adult stakeholders. These identify the most pressing areas of need within stakeholder engagement with children's digital citizenship. The embodiment and championing of child-centred, participatory research methods applied in this study extend to our recommendations and reaffirms our commitment as researchers to empowering the digital child. With this in mind, future avenues extending beyond this small-scale study may include:

- Broadening the participant base to include parents and primary/secondary educators.

- Broadening the participant base to include greater variations in demographic base.

- Expanding the involvement of researchers based in the country in which the participants are based.

- Extending the length of our study to collect and analyse more detailed and nuanced data.

- Pursuing children's engagement with critical thinking capacities and the increasingly sophisticated identity-building practices taking place within children's media cultures.

As digital citizenship endeavours move forward from all stakeholder quarters, we look forward to contributing further child-centred and thoughtful research additions to vital conversations about our collective digital futures, particularly the bright future of the digital child.

Illustration: Phoebe Hui Zeng

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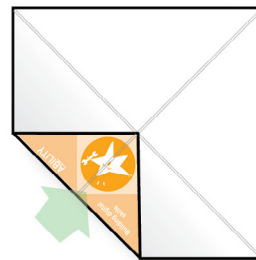
4A Chatterbox Origami Model (Make at home)
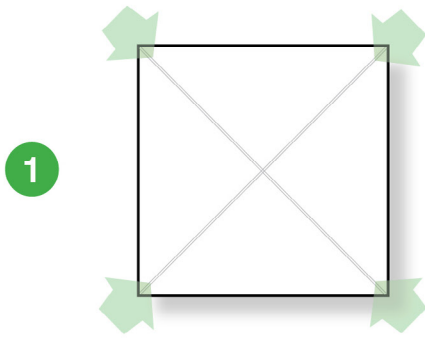
1 Starting with the white side face-up, fold each corner to the opposite corner and then back again...
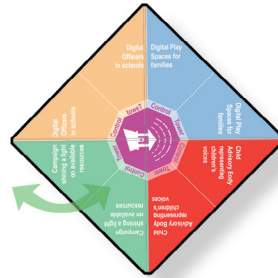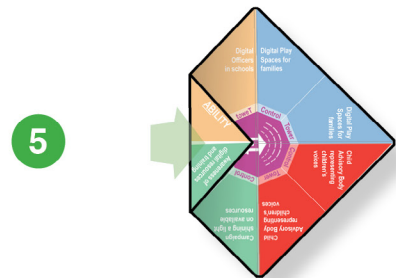
2 Then fold all four corners into the centre...

3 This is what your chatterbox should look like now...
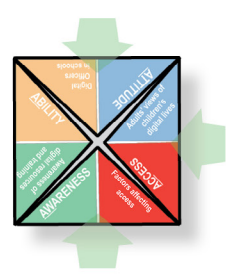
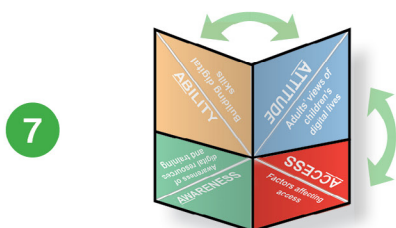**4** Turn your chatterbox over so it looks like this...

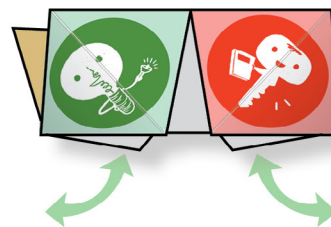**5** Then fold each of the four corners into the centre...

6 Your chatterbox should now look like this...

7 Fold your chatterbox in half vertically and horizontally, and then back again...

8 Fold your chatterbox in half so it looks like this...

9 Put your thumbs and index fingers into the gaps behind each of the icons and your chatterbox is ready to use.

How to play with your chatterbox once it is made:

1 Look for the name of one of the 4 As...

2 Then move your fingers until you find that A's definition...

3 Then unfold your chatterbox to reveal the recommendation for that A...