Children's Well-Being: Indicators and Research 23

Donell Holloway
Michele Willson
Karen Murcia
Catherine Archer
Francesca Stocco *Editors*

Young Children's Rights in a Digital World

Play, Design and Practice

Springer

Children's Well-Being: Indicators and Research

Volume 23

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Editors
Donell Holloway
School of Arts and Humanities
Edith Cowan University
Perth, WA, Australia

Karen Murcia
School of Education
Curtin University
Perth, WA, Australia

Francesca Stocco
School of Arts and Humanities
Edith Cowan University
Perth, WA, Australia

Michele Willson
School of Media Culture and Creative Arts
Faculty of Humanities
Curtin University
Perth, WA, Australia

Catherine Archer
Strategic Communication, School of Arts
Business, Law and Social Sciences
Murdoch University
Perth, WA, Australia

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The conferences, research networks, and academic collaborations bring together in this volume collaborating authors from across wide-ranging interdisciplinary backgrounds including cybersecurity, marketing, media/communications and cultural studies, commerce, engineering, early childhood education, ethics, and physiotherapy fused with psychology. This dynamic and interdisciplinary mix provides a wealth of research expertise and experience underpinning children's rights to participation, provision, and protection in a digital age, which fosters children's autonomy and freedom to explore play opportunities.

The editorial team for this volume consists of researchers drawn from across the four main universities in Western Australia and from a number of disciplinary backgrounds. Our team especially appreciates the resilience and persistence of our chapter authors, who finalised their chapters throughout the first half of 2020, as the COVID-19 pandemic took hold. Despite experiencing lockdown restrictions, working from home (often combined with childcare and home-schooling), and looking after vulnerable loved ones, these authors continued to edit and format their chapters and meet deadlines.

The editors gratefully acknowledge the vital assistance of Linda Jaunzems. Her attention to detail, organisational skills, and deep experience of the editing process helped enormously. They are also indebted to Springer for its editorial support and

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Chapter 1
Introduction

Karen Murcia, Michele Willson, Catherine Archer, Francesca Stocco, and Donell Holloway

In 2014, the UN's Committee on the Rights of the Child met to discuss 'Digital Media and Children's Rights'. The resulting Digital Rights Framework (Livingstone & Bulger, 2014) reconfigures how we understand children's needs, agency and vulnerability to harm in today's digital world. The rights framework also implies the roles and responsibilities for a variety of social actors including the state, families, educators within schools, not-for-profit and commercial entities, researchers and the children themselves.

This book foregrounds research which is centred on young children's rights in a digital world. It gathers current research from around the globe focussing on young children's rights as agential citizens to the provision of and participation on digital devices and with content—as well as their right to protection from harm (Livingstone, 2007). Implicit within this book is the acknowledgement that children of various ages, abilities, socio-economic and geographic backgrounds should have equal access and experiences with new digital technologies and content alongside adult support, and guidance to enhance these experiences.

The book is divided into four parts: The Early Childhood Home, Pedagogy Approaches and Challenges, Connected Toys at Home and School and Privacy and Protection. These parts scaffold the discussion ranging from considering the early childhood home, parental concerns and practices, connected toys, pedagogical

K. Murcia (✉) · M. Willson
Curtin University, Perth, WA, Australia
e-mail: karen.murcia@curtin.edu.au; m.willson@curtin.edu.au

C. Archer
Murdoch University, Perth, WA, Australia
e-mail: c.archer@murdoch.edu.au

F. Stocco · D. Holloway
Edith Cowan University, Perth, WA, Australia
e-mail: fastocco@our.ecu.edu.au; donell.holloway@ecu.edu.au

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approaches, privacy and data analytic challenges that present some obstacles for children in which research seeks to overcome. This book has an international focus with contributors and their diverse research projects drawn from across the globe. This international range enables similarities and differences across particular locales to be brought to the forefront. It becomes quickly apparent that parents, educators and regulators around the world are grappling with how to better support children's digital engagement to maximise affordances and opportunities in innovative ways, while being mindful of the need to minimise potential harm. Each chapter offers more focussed examination on a particular issue, question or concern, the collection as a whole also offers the reader the potential for a multifaceted reflection on the challenges and opportunities for our very young people within an increasingly interconnected, and digitally mediated landscape.

Part I: The Early Childhood Home

Part I provides research findings from a variety of family-based studies internationally. The authors discuss children's digital technology use, parental attitudes and beliefs about screen use in the home, parental mediation strategies, family communication practices, and the social implications of screen use in the family home (such as reducing or enhancing interactivity between family members). In all cases, parents are endeavouring to protect their children from harm, while at the same time providing them with the digital opportunities to participate, learn and play. However, they are often caught in a myriad of contradictory messaging and paradigms from media, education providers, health professionals, family and the community alike that can be difficult to reconcile and to navigate.

In Chap. 2, *The tablet is my best friend!": Practices and perceptions of young children and their parents*, Patricia Dias and Rita Brito base their chapter on the interviews and activities conducted with 25 Portuguese families, including the parents and their children. The authors sought to discover how families are adopting digital technologies in their home. They selected a varied sample, considering the gender of the child, family composition and socio-economic status, to obtain a variety of narratives on the phenomenon being studied. Discrepancies were identified in the discourses of parents and children regarding the perception of dangers and benefits (parents value learning and place more emphasis on risks, while children enjoy fun, and enjoyment), the digital skills of children (children are more autonomous and capable than parents think), and the criteria for setting rules (parents tend to be restrictive of screen-time, but not of content and activities).

In Chap. 3, *Family mediating practices and ideologies: Spanish and Portuguese parents of children under three and digital media in homes*, Mitsuko Matsumoto, David Poveda, Ana Jorge, Raquel Pacheco, Vítor Tomé, Cristina Aliagas and Marta Morgade explore how parents accompany their very young (under 3 years old) children's inclusions into 'digital society' by examining their mediating practices and ideologies. The authors draw on diverse data (observations/video-recordings

and interviews with parents at home) from case studies of five children from middle-class families from Spain and Portugal, collected in 2017, following the protocol developed for *A Day in the Digital Lives of 0–3 Year-Olds* (Gillen et al., 2019). The authors problematise the complex relationship between parental beliefs, self-perceptions and their actual practices regarding the place of digital technologies in children's lives. They do so by examining mediation as an emergent process in which family members co-create interactional ecologies (Kyratzis & Johnson, 2017; Erickson, 1996), and by seeing mediation as a set of strategies within family routines (Livingstone, 2007). In terms of the digital ecosystem, they analyse mediation at the levels of the digital media ecology/environment in the home, the actual digital media activities and mediation practices, and the parents' broader media ideologies and beliefs on technologies (Gershon, 2010), finding, as in the previous level, contradictions between the various stakeholders.

Portugal is also featured in Chap. 4, *Digital parenting and transnational migration: Cultural and emotional drives for digital media use*, with a focus on the country's history as being marked by flows of immigrants and emigration. Authors Teresa Castro and Cristina Ponte explore the niche of the transnational families with the two research questions: how are late modern transnational families incorporating and making sense of communication tools in their everyday parenting chores, and secondly, families' interactions and how they are regulating children's digital provision and protection? The authors selected six different families (in Portugal and England) in terms of cultural and socio-economic characteristics, as part of an ongoing qualitative longitudinal study (iTec Families). The chapter builds on the families' testimonials, perceptions and practices to stimulate the debate around children and technology in the domestic context, and on parental guidance and mediation from a socio-constructivist standpoint. They investigate whether the adoption and appropriation of digital technology is a relevant element in shaping families' daily lives, and whether digital artefacts and their perceived affordances help foster connectedness.

In Chap. 5, *Children's rights to 'good' and 'bad' screen time: Parental narratives of how children do family online*, authors Helga Sadowksi and Lina Eklund draw on interview data with six extended Swedish families spread over 18 households, and investigate how parents and grandparents manage, relate to, and assist in children's digital family work. For many families, digitally connected technology has become an ingrained and indispensable part of family life. Smartphones and other digital communication technologies help families to keep up with each other during school/work hours; organising family gatherings can be coordinated in chat-groups created, specifically to facilitate time for family catch ups; and keeping up with grandparents overseas has become much more vivid thanks to video-telephony. However, integrating this technology into families' everyday lives means new (micro) tasks, new opportunities, but also new troubles. In their qualitative analysis, the authors demonstrate how particular roles and tasks are assigned to and expected of the children. They find that the children are often put into a paradoxical position: On the one hand, they are understood as digital natives "by default", who embrace digital technologies and for whom communicating online is automatically fun and

easy; On the other hand, they are positioned as victims of omnipresent digitalisation who need to be protected against a backdrop of an idealised 'natural childhood'.

Meanwhile, in an Australian context, authors Will Balmford, Larissa Hjorth and Ingrid Richardson in Chap. 6, *Taking over the living room: Children's mobile mediaplay in domestic space*, explore scenarios of use concerning the play practices of children on mobile devices, and the subsequent domestic tensions that arise out of such practices. In a domestic media landscape, mobile media has increasingly featured in the contested and contradictory practices of the home (Morley, 2000). Mobile media constantly blur distinctions between public and private, work and leisure. The chapter draws on fieldwork from the Games of Being Mobile (GoBM) Australian Research Council (ARC) project—a 3-year, nationwide study of Australian mobile gaming practices—to unpack how these tensions manifest within the domestic environment. In order to best examine these tensions, the chapter initially reviews key literature on the relation between domestic space and media practices, before providing an overview of the GoBM project. The discussion component of the chapter uses two detailed key case studies to unpack how domestic usage of mobile devices by younger children are challenging earlier, and more traditional models of media use in the home. The phenomena the authors explore in this chapter highlights the shifting needs and agency of children in a digital world, a key focus of this volume. Furthermore, the various familial tensions are indicative of the difficult balancing act parents face between ensuring online safety, data privacy, security and protection, as well as encouraging digital literacy for their children that has been touched on in some way in all of the preceding chapters.

In Chap. 7 by Maureen Mauk, *Think of the parents: Parental controls in digital TV and family implications,* the author uses a combination of discourse analysis and discursive interface analysis to interrogate Netflix's algorithmic affordances, against their claims of easing parent/subscriber burdens with its 'informed viewing' parental control tools. Traditionally, media regulations are often framed as being put in place 'for the children' with the expressed intent to 'protect society's most vulnerable'. This framing often fails to consider the needs of parents who are playing the role of familial gatekeeper, while contending with exigent public scripts on children's media consumption. The chapter argues that to adequately consider the algorithmic design and practice of children's participation in the digital space, it is also necessary to take into account the implied roles and responsibilities of families as they navigate their children's interactions with media content. Given the children's digital content industry boom coupled with the "psychological space" (Jordan, 2016) that content mediation requires of parents, this chapter examines the cultural implications of parental controls beyond regulatory execution, to consider its affordances. Proposing a shift to the approach for platform control away from government standards and towards better utility of the affordances of algorithmically driven content, this chapter offers a new framework and potential solutions that give families more control, creating new allowances in time and mental space 'for the parents'.

Then in Chap. 8, by Kylie Stevenson, Lelia Green, Donell Holloway and Kelly Jaunzems, *Screening language acquisition skills in a mediated childhood,* the authors used an observational ethnographic case study approach, informed by

play-based research methods, to explore a young child's media and play practices within a bilingual home. The 2-year-old child, Lavinia, was an ardent fan of *Peppa Pig* and, during the in-home observation and interview with her mother, researchers observed her playing *Peppa Pig* in Mandarin on an iPad in parallel with the same episode in English in streaming video mode on the television. The researchers watched Lavinia set up this entire system of media retrieval and replay. Lavinia effectively created a personal tutorial to practice her Mandarin–English bilingual comprehension using *Peppa Pig* in a self-directed manner. In this chapter, the authors have shared the importance of multiliteracies to this family's everyday life, addressing how Lavinia has engaged creatively with technology and culture even at a very young age.

Part II: Pedagogy Approaches and Challenges

Part II explores the pedagogical actions and roles taken by educators to the development of children's digital competencies. Authors in this section report on learning design analysis, and the pedagogical decisions made by educators in response to changing curricula, parental expectations and children's learning needs as they develop as active creators with digital technologies.

Increased access to digital technologies is argued, by Judith Dinham, in Chap. 9, *Media Arts in early childhood: A framework for developing young children's creative participation in the digital world,* to have democratised mass-media communication and made it possible for everyone to create and communicate to a wider audience. This chapter explores the potential for young children to be active creators, by adopting multimodal and multi-medial practices, as part of a participatory culture. The nature and role of media arts practices in contemporary early childhood learning is presented from a participatory culture perspective. The author offers a model for conceptualising the way media arts can be a meaningful part of the daily early childhood learning program and provides a framework for reimagining children's learning, and redefines the role of the contemporary early childhood educator within this personalised learning journey. It also situates the educator in terms of five roles that are enacted daily in a dynamic and synergetic relationship: artist, researcher, designer, co-constructor, and advocate. The author suggests that this model could assist educators charting their own professional growth in a participatory culture, and also serve to frame research about contemporary educational practices.

The focus on teachers' roles in learning environments infused with digital technologies is further explored by author Vicki Schriever in Chap. 10, *The impact of digital technologies on the role of the early childhood teacher.* The author highlights significant and contemporary challenges facing early childhood teachers as they manage the emergence of curricula expectations regarding children's engagement with digital technologies that are integrated into early learning environments. The author shares the findings from a grounded theory (GT) investigation concerning how early childhood teachers understood and managed their changing

roles regarding information communication technologies (ICT) in the context of their kindergarten. Semi-structured, in-depth interviews were undertaken with 19 practising early childhood teachers, employed at different kindergarten settings across a regional area of Queensland, Australia. The author exposes the distinct ways early childhood teachers perceive their role, reveals the significant impact ICT has on the role of the early childhood teacher, and uncovers the actions taken by early childhood teachers to manage digital technologies within their kindergarten.

In Chap. 11, *Bridging Communities: Developing digital literacies and introducing digital technologies in the Montessori Early Childhood Education classroom,* challenges and opportunities are explored in the development of authentic methods that are responsive to Montessori pedagogy, for developing children's digital literacies. The authors, Sharon Davies, Samantha Owen, and Sarah Iles share a richly descriptive account of their action research project, initiated by 'River' Montessori School in response to a change in the local authority's mandated curriculum. In this chapter, the authors discuss their whole school project and the professional learning actions implemented that supported teachers' experiments, including possible strategies for digital technologies implementation. The contention made in this chapter is that while there was no agreed approach or consensus reached for implementation of digital technologies in the international Montessori community, the heart of the struggle lay with the River community, as there was no consensus around attitudes to use which could guide implementation. The authors explain how ultimately the identification of a shared language resolved the internal contradiction in the school as educators were confident that the approach with digital technologies was consistent with Montessori pedagogy, and this encouraged a channel of communication between educators, children, and families and—finally—a common approach.

Chapter 12 turns to focus on the voice of children and their right to playful digital learning in the early years. Authors Helle Hovgaard Jørgensen and Helle Marie Skovbjerg, in their chapter *Understanding the mutuality of play and media literacy in young children: An ethnographic investigation of pre-primary school children's perspectives on media literacy as seen through the lens of play,* propose that in a digital world, children's play and their implicit right to play extends to play involving digital technologies. The authors aim to link children's right to play to a broad and socio-culturally inspired stance of media literacy that involves dimensions of play. The authors revisit the concept of media literacy to frame and understand the nature of play with digital technologies. The importance placed on children's agency and play is based on a long-term field study of children aged 5–6 years in two Danish public pre-primary schools. Throughout this chapter, the importance of the children's perspective is recognised as they actively participate in digital play. The authors share the voice and ideas of children as they explain how to construct a game, and in so doing, provide a new perspective on media literacy from the child's perspective.

Next, author Jo Li Marie-Joelle Tay gives consideration to the learning design of tasks and the cognitive load they place on children as they play and learn. In Chap. 13, *Digital technologies and children: Does more digital interactivity make for better learning?* the author examines the concept of interactivity in relation to

learning experience, technology, and cognitive load. The author argues that it is unclear whether more digital interactivity actually makes for better learning. She discusses the limitations of working memory and argues that children can only process a small number of different items at any one time. Working memory becomes problematic when there is high element interactivity in a given task, and the interactions between many elements must be learned at the same time. This simultaneous interactivity results in a high cognitive load (Sweller, 1994). In this chapter, a model of interactivity is presented and used by the author to analyse three different mathematic Learning Experience Scenarios (LES) which are: a printed worksheet, Mathletics (an online learning mathematics website), and Minecraft (a popular multi-player online game). The concept of cognitive load is used to interpret the results of visually mapping the dimensions of interactivity in each task. The author suggests that when used together, cognitive load theory and the innovative model of interactivity that are presented in this chapter could provide a lens for critiquing the suitability of learning tasks for children.

In Chap. 14, authors Catia Malaquias and Katie Ellis take a social and human rights approach to disability, as they draw attention to the disruptions caused to education systems and inclusive practices by the COVID 19 pandemic. Quantitative and qualitative research undertaken by Children and Young People with Disability Australia during COVID-19 identified a lack of appropriate materials, and social support. This chapter draws on this evidence and the broader context of digitisation articulated within disability media to highlight the persistence of disabling attitudes in preventing the realisation of human rights such as inclusive education.

Part III: Connected Toys at Home and at School

Implicit in Part III, is recognition of young children's right to play and to learn through play. This section of the book focuses on the design features of devices, software applications and learning environments with their roles in influencing and enhancing children's engagement in playful learning experiences that are aligned with their developmental needs. In all of these chapters, children are viewed as competent contributors in digital environments, where they are ideally supported to be creative participants and active learners.

In Chap. 15, *Internet of toys and forms of play early education: A longitudinal study of preschoolers' toy-based learning experiences*, Pirita Ihamäk and Katriina Heljakka engaged with 20 Finnish preschool children and their teachers to understand children's play and their educators' understandings of this play, in the newly emerging hybrid and connected context of digitally connected and enabled toys. The authors raise questions about how to best bridge the gap between pedagogical understandings of play with connected toys, and young children's experiences with digital technologies, digital play, the digital dimension of toys and their relation to popular culture. This 6-month study examines how educators have adapted two IoToys: Fisher-Price's Junior Smart Toy Bear and Wonder Workshop's Dash Robot

as part of early education in the preschool environment, and how these children have experienced toy-based learning.

Continuing the exploration of children's educational and connected play, in Chap. 16, *Digital play objects as part of preschool children's imaginative play*, Kristín Dýrfjörð and Anna Elísa Hreiðarsdóttir explore how children play with digital play objects they have not encountered before in an environment they are contextualised in, with support from recognised materials. The connection between children's imaginative play and coding devices, in particular, a little beetle Blu-Bot and the coding blocks Cubelets are examined. They investigate children's relationships with both each other and the devices to explore the creativity, emotions and problem solving that appear during play. Part of the chapter's intent is to explore how the culture of children's local community permeates and becomes a significant part of their play.

In Chap. 17, *Co-creating hybrid toys as an approach to understand children's needs in play experience*, authors, Tamara Pinos Cisneros, Felipe Escobar Vega, Ben Kröse, Ben Schouten and Geke Ludden suggest the use of hybrid toys as an innovative way to engage children in personalised healthcare in the delivery of physical therapy. However, they asserted that there was a requirement to first understand the needs of children in their digital-physical play experience to be able to effectively design these toys. The aims of this explorative study were to identify the needs of children in their play experience and to examine co-creation workshops as a mean to do that. Finally, the authors highlight the importance of involving children in the development of new smart technologies for play, by empowering children to design their own smart toys.

Part III also includes research involving the development of hybrid toys to enable the diagnosis of developmental delay and to facilitate the delivery of physical therapy for children with disabilities. In Chap. 18, *Assessing developmental difficulties in children through connected Smart Toys*, authors Diego Rivera, Maria Luisa Martin-Ruiz, Luis Cruz-Piris, Kevin van der Meulen, Antonio García, Cristina Serrano García, Susel Fernández, Bernardo Alarcos, and Juan R. Velasco, consider how the use of playing activities and tools have been proven to be a powerful method for the assessment and monitoring of children's psychomotor development, from a psychology perspective. According to the authors, the traditional manual measurement techniques used in psychology limit the accuracy of the results, and also restricts the range of people who can carry out the tests (as they should be experienced specialists). The improvement of sensor-based technology and the rise of the Internet of Things (IoT) paradigm, they suggest, provide an interesting opportunity for the design of platforms, devices, and methods which could improve assessment outcomes. The authors propose the design and development of an IoT-based platform composed of smart toys designed specifically for the assessment of children. As part of their research, they have designed and built sets of sensor-embedded toys mimicking some of the most used tools in the current validated psychology scales.

In Chap. 19, *Young children learning to code: A digital technologies framework for the early years*, Karen Murcia explores the role of digital technologies in early childhood education and how young children's experiences with them are

increasingly discussed and negotiated in a learning centre. Specifically, the author used a grounded theory (GT) approach to identify and document how educators see and understand learning opportunities for young children, as they played with tangible coding technologies (TCT's) or 'robots'. The 6-month action research project involved four early childhood educators working in a University's Early Years Centre that provided long daycare and a kindergarten program. In collaboration with the educators, the author investigated and compared how children learned through play with two types of TCT's: Bee-Bots and Cubetto. It was evident that educator's technological pedagogical content knowledge was key to the quality of children's learning experiences with the digital technologies. An outcome of this research was an innovative early year's digital technologies (DigiTech) framework that positioned young children's digital literacy as a multi-faceted construct that sits at the intersection of computational thinking, digital technology skills and social-emotional capabilities. The participating educators reported that the framework assisted them to see and respond to learning opportunities for the children as they played with the tangible coding technologies.

Part IV: Privacy and Protection

In Part IV, a slew of privacy concerns are also raised as children's data is collected and as private corporations offer tech to education and health providers in potentially problematic alliances. National and international, commercial and educational aims and objectives, policies and practices may not easily align or be managed in ways that ensure the complete protection against data privacy and security risks, and the agency of the child in these experiences. This section considers children's rights to privacy and protection through research about the normalisation of parental, commercial and state surveillance practices (including big analytics and predictive algorithms), and their complex interactions that can impinge upon children's rights.

Chapter 20, *Researching representations of children and childhood on Instagram: Ethical and methodological considerations,* focusses on the agentic rights of the child as digital citizens (DEEWR, 2009; Robinson & Jones-Diaz, 2016). However, the authors, Madeleine Dobson and Jenny Jay suggest that children's voices are silenced as a result of the surveillance involved. Sharenting has become a 'normalised' part of the parenting repertoire resulting in a high level of engagement with 'influencer' parents, and 'microcelebrities' who disseminate posts of children's activities on social media, curating an idealised representation of their children's and families' lives (Blum-Ross & Livingstone, 2017; Leaver, 2017). Children's images and content can be commodified through sponsored posts that portray children in an idealised fashion. Predictive algorithms analyse posts to construct future content relating to children, including blogs, images, and videos. Sharenting can result in a number of accuracy and privacy-related consequences that warrant protection for children's images, such as the misrepresentation of marginalised groups (Choi & Lewallen, 2017). This is in contradiction to the

principle that children from different socio-economic backgrounds should have equal experiences with digital technologies, and on social media platforms. The chapter argues that parental media literacies should be further supported by acquiring digital skills and competencies to effectively manage the dissemination of their children's images in the public arena, such as by providing children with filtering tools, that have settings to restrict viewers (Molina et al., 2010). A multi-phase case study approach (each a month-long of data collection) was used to identify how the child was conveyed on Instagram posts by popular influencer parents, children's brands (collected in accordance with Australia's fair dealing principles), and high-profile celebrity parents. The analytical matrix analyses the different visual, discursive and creative aspects within the photograph/video/story, and any captions, tags and comments from the Instagram posts. Prospective influencer parents who use Instagram were invited to participate in interviews to capture their perspectives of the platform, and if they involved their children in creating posts. The results of images portrayed on Instagram were analysed in comparison to the traditional pedagogical images of capable and competent children that early childhood educators have constructed.

Chapter 21, *The 'sharent' trap: Parenting in the digital age and a child's right to privacy* explores the popular practice of sharenting,—particularly by mumpreneur influencers, and those parents who are also categorised as 'micro-microcelebrities'. The authors, Anna Potter and Renee Barnes, argue that sharenting involves a conflict of interest. This is because parents (as primary caretakers) have a vested interest in their role to protect their children's right to privacy. However, they also share their children's data and information online in ways that reduce their children's autonomy to control their own personal data. In order to examine this tension, the literature reviews parents' enthusiastic attitudes towards posting about their children, positioning them as part of an audience's social media gaze; however, suggests that this is in contrast to the protectionist view of children who make up a special audience of media as vulnerable minors, and who have developing competencies (Buckingham et al., 1999; Lemish, 2007). Parents are responsible for curating posts of their children, without asking for their consent. An online survey (N = 613) of Australian parents with children aged 0–13 years was used to explore their social media (Facebook and Instagram) usage, views on children's privacy and their implementations used to protect their children's privacy online. The majority of parents at 58% reported that children earned the inherent right to privacy from birth, and 74% of parents believe children's permission should be asked before posting content on either Facebook or Instagram to protect their right to privacy. The results demonstrated that 27% of parents believe posting is very risky, and the majority of parents manage their privacy using social media privacy settings; with 64% of parents aged 45–54 years using the custom lists function when sharing post's containing their children's content. The disconnect between parental beliefs and attitudes about their children's rights to privacy, recalibrates the relationship between children, parents and the media.

Chapter 22, *Santa's little helper and star of Instagram, Elf on the Shelf: Gendered labour, normalising surveillance and digitising a childhood phenomenon*, by

Catherine Archer and Tama Leaver situates the Elf on the Shelf (EotS) as a popular interactive and worldwide cultural phenomenon that sits on the shelves of families' homes and reports back to Santa about children's behaviour during the festive period. Despite being a popular children's Christmas toy, the EoTS has earnt a contentious reputation as a hyper-surveillance device that is used to listen in and 'spy on' children's activities, both by parents through intimate surveillance (Leaver, 2017), and by commercial and state actors who commodify children's data into monetary value contributing towards surveillance capitalism (Zuboff, 2015). The data was downloaded from Instagram that resulted after searching for #elfontheshelf2018 in June 2019. This data identified the top nine posts that were ranked highly by algorithms, was analysed thematically, through visual narrative analysis and social semiotics. This data was investigated as to whether mumbloggers support or challenge the notion that the EoTS toy normalises surveillance by commercialising children's data. The EoTS Instagram posts often generated traffic by directing followers to mother's blogs or professional profiles, and there were also different projections, cultural significance and characterisations of the Elf.

Chapter 23, *Digital predictions: Children's futures, opportunities and obstacles*, by Michele Willson discusses the increasing role played by predictive algorithms (employing artificial intelligence techniques such as pattern recognition, big data analytics, machine learning and behavioural modelling), to shape children's futures. The author suggests predictive algorithmic decisions can influence and impact children's future opportunities in education, health, commercial and social spheres. Intimate children's data (Leaver, 2017), physiological and behavioural, is tracked by and manipulated through algorithmic processes from conception onwards. Commercial and state data is collected, analysed and aggregated, for children who are positioned as vulnerable subjects in need of protection. The ability of insightful commercial and educational data to perceive and predict an imagined future for children is enticing, often occurring via engagement with third-party commercial providers, that offer digital learning activities. Furthermore, data that is extracted from biometric devices such as children's wearables can have impacts in creating foreseeable learning and development outcomes, by engaging diverse academic bodies within psychology, health, and neuroscience disciplines. The results of pre-emptive decision-making based on of predictive algorithmic outcomes for children is initiated by the data collected from diverse sources, intents and perspectives. This can result in perverse outcomes that undermine or thwart the child's and parental agency. Once again, this is in contradiction to the idea that digital technologies can enable all children from different 'walks of life' to seek and fairly access equal opportunities.

Chapter 24, *Research Ethics and Digitising Early Childhood* by Madeleine Dobson, Karen Murcia, Kim Gifkins and Donell Holloway investigated ethical issues which children and researchers face within an environment of digital technologies. Researchers, in collaboration with parents, make pragmatic interpretations using their knowledge of ethical principles, and evaluate different approaches to make impactful ethical decisions regarding their work with children and digital technologies. Four vignettes are presented in this chapter from researchers' practice,

and the ethical process used in each was analysed through the 'Digital Child' Ethical framework, developed from the current National Statement on Ethical Conduct in Human Research, the EECERA Codes for Ethical Conduct and the Guidelines for Early Childhood Australia. As an example, and to illustrate, the first vignette concerned the *negotiation of initial consent* and *anonymity* by using open and clear information to communicate respectfully with prospective participants regarding extracting and anonymising data from families' Instagram posts to analyse the construction of childhood. A pragmatic decision was reached by researchers to use crystallisation techniques to blur any facial identifying features of children, and adding captions to convey emotions, that protected the privacy and identity of the children. Significantly, the vignettes presented and analysed in this chapter highlighted that researchers should: consider the negotiation of ongoing consent through regular progress updates; seek creative ways to maintain anonymity; and plan ethical considerations when disseminating research outcomes within appropriate contexts to various stakeholders which could include: participants, researchers and a general community audience. The Digital Child Ethical Framework aims to provide researcher's with guidance for resolving ethical dilemmas that are frequently experienced when researching with children in a digital environment.

This book acknowledges that very young children's internet use, and that of their parents and educators, carries with it a variety of opportunities and risks for children. The book seeks to find a balance between children's rights to provision, participation and protection;—a balance that does not diminish young children's rights to play and learning in a digital world. With respect to the opportunities and risks online, it is evident throughout the book that children's play practices with digital media, their screen use, smartphones and mobile media play, and, on a broader level, sharenting on social media platforms, create many conflicting messages and domestic tensions for parents, educators, regulators, and children. On one hand, there is the perception that these devices and platforms present the opportunities for children to foster innovative play and develop important digital literacies; however, on the other hand, these same devices and platforms can open up experiences and access to others which could inflict harm upon vulnerable children. The harm may be implicit, such as screen overuse, or mobile media blurring the boundaries between different aspects of life (public, private, work and leisure) beyond children's play practices. We are reminded by the research shared throughout the book that children's content on social media platforms could be mined by algorithmic artificial intelligence practices, which enable the commodification of their data, targeted marketing schemes and remarketing to parents on social media. Shifts are seen to occur regarding children's agency in the digital world, as algorithmic assemblages can potentially provide and predict opportunities and future content for children. The question then is how do we protect children's vulnerability and provide parents with more control on content-mediated platforms.

Authors throughout this book recognise that online digital platforms, connected toys and digital tools provide tremendous opportunities and challenges for all who surround and support children in their educational and life journeys. In this book, pedagogical, social and parental understandings and practices are shared that could

maximise learning and contribute to positive social and emotional opportunities for children, while minimising risks. Digital technology and its use can provide innovative and engaging ways to inform pedagogy, enhance the development of children who have learning difficulties, increase digital literacy in society, and to facilitate increased social engagement as we navigate diverse socio-economic and cultural contexts. In order to achieve the vision created by the authors, approaches are sought that respect children's agency and that grapple with the tensions, contradictions and desires of the various social actors involved. Within the covers of this book we have aimed to achieve a greater understanding of our children's needs, rights to agency and vulnerability to harm in today's digital world.

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Karen Murcia is an Associate Professor in the School of Education, Curtin University. Her research interests include scientific literacy for citizenship, creativity with digital technologies and STEM education. She is a researcher with the Australian National Centre of Excellence for the Digital Child, Chair of Child Australia and a Scitech Discovery Centre Board Member.

Michele Willson is Professor of Internet Studies at Curtin University, Perth in Western Australia. Her research explores the intersection of technology and the everyday with a particular focus on algorithms, digital childhood, social games and online sociality more generally.

Catherine Archer is a Senior Lecturer and researcher specialising in social media and strategic communication at Murdoch University. Her current research interests include social media, focusing on families' use of social media, influencer relations and ethics, and the blurring of lines between media, marketing, public relations and communication.

Francesca Stocco is PhD candidate at Edith Cowan University researching connected toys, with particular reference to the commercial governance of these toys. She is currently analysing selected privacy policies (PPs), terms and conditions (T&Cs) and frequently asked questions (FAQs) related the connected toys.

Donell Holloway is Senior Research Fellow at Edith Cowan University, Australia. She is a Chief Investigator on three Australian Research Council grants, the ARC Centre of Excellence for the Digital Child, The Internet of Toys: Benefits and risks of connected toys for children, and Toddlers and Tablets: Exploring the risks and benefits 0-5s face online.

Part I
The Early Childhood Home

Chapter 2
"The Tablet Is My Best Friend!": Practices and Perceptions of Young Children and Their Parents

Patricia Dias and Rita Brito

Introduction

The society we live in is profoundly shaped by the integration of digital technologies in our daily lives. Children are being born in homes populated with computers, smartphones and tablets, and coming into contact with these devices at an increasingly younger age (Kucirkova, 2011; Plowman, 2015). This new domestic media landscape poses challenges to parents, who mediate access to devices and content for young children (Dias et al., 2016). Perceiving both risks and opportunities in the digital environment, parents struggle to reconcile the main axis of the Digital Rights Framework established by the UN in 2014—protection, provision and participation.

Our study provides an in-depth look at the digital practices of families with young children, using a qualitative approach. It aims to shed some light on how parental mediation styles are coping with the need to protect young children from online risks, in a way that still provides them skills and allows them to participate in the opportunities that the digital environment also holds.

P. Dias (✉)
Universidade Católica Portuguesa, Lisbon, Portugal
e-mail: pdias@ucp.pt

R. Brito
ISEC Lisboa, Lisbon, Portugal

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