Chapter 9
Media Arts in Early Childhood: A Framework for Developing Young Children's Creative Participation in the Digital World

Judith Dinham

Introduction

Media studies first appeared in the school curriculum when the evident effectiveness of mass media propaganda during the World Wars, the advent of television, and the growing use of visual media by advertisers, fuelled concerns about the unwitting consumption of media messages. The curriculum focused on immunising children against perceived negative influences (Dinham, 2020). When research in the 1980s highlighted the social, cultural and educative dimensions of children's television consumption (Hodge & Tripp, 1986; Singer et al., 1981; Zuckerman & Zukerman, 1985), analysing and learning *about* media became a focus within the English curriculum.

The birth of the digital age has again changed society's relationship to mass media because the diverse affordances offered by the internet, and the concomitant proliferation of media communication tools, have made the media space available to all. This has radically restructured our personal, local, and global networks; the way we engage socially, culturally and politically; and the way we understand ourselves and our place in the world (Postill & Pink, 2012; Hopkins, 2016).

In this digital world, children not only need to be skilled at analysing and evaluating the way meaning is constructed, and safely navigating the virtual social space, they increasingly require the capability to think *with* media (Ohler, 2008) as they construct meaning through their own creative production and communication.

Policy makers and educators have grappled with the implications of this fast-changing world. There has been focus on the 'digital divide', with initial concerns about equity of children's access to technology being replaced by concerns about the

J. Dinham (✉)
Curtin University, Perth, Australia
e-mail: j.dinham@curtin.edu.au

equity of their access to bandwidth (Hilbert, 2011). Another focus has been on 'digital citizenship' and developing children's safe and responsible engagement with digital technologies (Ohler, 2010; Ribble, 2015). We have also seen the introduction of 'digital literacy' education to develop children's capacity to navigate digital contexts. Overall though, little attention has been given to developing children's capabilities to be *creative and active participants* who benefit from the opportunities that digital access offers (Jenkins et al., 2006; Ohler, 2010).

In 2014, the United Nations' Committee on the Rights of the Child initiated discussion about digital media in the context of children's rights—including the right to freedom of expression and the right to be heard. Research findings presented to the Committee highlighted the importance of ensuring that children were able to benefit from the opportunities of digital access (Third et al., 2014). The lead researcher, Amanda Third (2014) noted that "... in our efforts to ensure that children's right to be protected is upheld, we may in fact be curbing their right to participate, and subsequently formulate their own opinions and new ways to use technology" (Institute for Culture and Society, UWS, 2014).

With the digital world profoundly transforming the ways we think, communicate, and make meaning—a number of scholars and researchers describe the evolution of a new literacy (epiliteracy). Many of the observed characteristics, such as a participatory and navigational approach to learning and expression, are in accord with the thinking and work practices employed by artists. The first proposition in this chapter is that young children's engagement in arts learning experiences will facilitates their development of the habits of mind and authorial practices of the digital age.

In the Australian Curriculum, Media Arts as one of the five disciplines in the Arts Learning Area. The second proposition in this chapter is that media arts offer valuable and playful ways for children, from a very young age, to participate actively and creatively in the digital space. Media Arts has its roots in the invention of photography in the nineteenth century. It evolved in the twentieth century to include mass media forms such as film and television, and now in the twenty-first century incorporates 'new media art'—a term used for arts practices that explore and employ the affordances of digital and other new technologies: multimodality, interactivity, robotics, computer graphics, and computer animation. Since the Arts curriculum is focused on children telling their own stories and communicating their own ideas through different modes of expression (Dinham & Chalk, 2018), the Media Arts curriculum strenuously supports children's right to freedom of expression and their right to be heard in the digital context.

The third proposition in this chapter is that the principles for integrating arts learning into the teaching programme outlined in the ArtsIN Framework (Hartle et al., 2015) provide a pedagogical model for the early childhood educator to support young children's engagement in the arts in ways that develop their ability to actively and creatively participate in the digital world.

The Digital Ecology

The advent of digital technology is overrunning the familiar text-based world and demanding "new habits of mind, new ways of processing culture and interacting with the world around us" (Jenkins et al., 2006, p. 21). This seismic change in the way we think and the way we know ourselves and engage in our world—our being, belonging and becoming (Peers & Fleer, 2014)—cannot be ignored nor addressed by merely introducing some digital devices into the classroom.

In fact, because digital technologies are uniquely 'malleable' (Hopkins, 2016) 'affordances' (Gibson, 1986), with the potential to be used by different people in different contexts at different times in different ways, they have become deeply integrated and embedded in our world and in our interpersonal, social and cultural practices. This is creating a new ecology: a network of experiences and practices emerging in relational ways across natural, socio-cultural, built, and virtual environments (Stokols, 2018).

Very young children's active participation in this ecology is supported by several factors. Firstly, the core devices are generally affordable, portable and available. In Australia, for example, one third of pre-schoolers have their own tablet or smartphone (Royal Children's Hospital, Melbourne, 2017), and many more have access to them. Secondly, devices are increasingly easy to manage and very young children can readily draw, take photos and play games by using their fingers to touch, swipe and press a touchscreen. Thirdly, the multiple modes (visual, aural, textual) dissolve age, literacy and language barriers. Very young pre-literate children can effectively create and communicate their ideas using the technology around them.

In light of this reality, Barr (2019) suggests we need to move beyond thinking of media in the early childhood context as a 'nuisance variable' and instead accept it as a fundamental part of the context in which children's development occurs. By working *with* media and the way it shapes our belonging, being and becoming, we can educate children in the new literacy practices for participating as active agents in their socio-cultural world.

The Epiliterate Child Developing Literacy with the Mindset of the Artist

Studies of how older children employ digital affordances in their self-initiated and self-directed practices—inevitably outside the school environment—have led to observations about the characteristics of creative engagement and the way meaning is constructed in a globally connected, dispersed, open-access, digital world (Dezuanni, 2018; Huber et al., 2015; Jenkins et al., 2006; Kress, 2003; Marsh, 2006). While this is an evolving landscape, many of these identified practices correlate with the way artists engage in meaning making (Orr & Shreeve, 2017).

Kress (2003), arguing that being literate in the digital age involves being able to think and express ideas in different modalities or combinations e.g. text, visual and audio, proposes that a *design* approach to literacy suits the multimodal environment of a digital world. Huber et al. (2015) observe that a design approach invokes the mindset of the artist, "weaving together linguistic, visual, aural, gestural and spatial features to form coherent compositions" (p. 45). They go on to argue that, like the artist, individuals exercise agency to curate personalised multimodal compositions according to their requirements and preferences. The authors coin the term epiliteracy ('epi' from Latin meaning 'after' or 'post') to describe these emerging authorial practices.

Jenkins et al. (2006) lodge such practices within a 'participatory culture'. They observe how children, when left to their own devices, gravitate towards creating and communicating in collaborative and inclusive ways. In dispersed, fluid social networks formed across different cultural territories, the skills they activate are those of play-based learning, performance, appropriation, teamwork, transmedia navigation, networking, mentoring and negotiation. These practices resonate with the practices of the artist, and underscore the way the arts provide a bridge to the epiliterate practices required for participating in the new socio-cultural dynamics of an interconnected, digital world.

One of the reasons the expressive practices of artistic engagement align to those adopted in a digital world is that the Arts eschew prescriptive solutions. While 'well-structured' learning domains such as Maths are characteristically based on theorems and laws which are applied in a variety of situations with predictability, the Arts is an 'ill-structured' learning domain (Efland, 1995; Short, 1995) because meaning is not fixed: concepts vary in meaning, depending on the context.

The artist also typically has a navigational approach to learning (Bourriaud, 2006), assembling information, and linking up with collaborators, to meet specific needs, skill requirements and aspirations in a specific context. Perkins (2007) refers to this as an 'import' learning paradigm. He contrasts this to an 'export' learning paradigm readily seen in classrooms where information is learned so it can be applied at some later stage if required. Artists are drawn to researching and investigating topics, or learning arts-making processes, as required. They assemble information, or learn processes, or seek out experts, around the requirements they have in a particular context and at a particular time.

The multimodalities of the digital world with multiple points of entry and different ways of participating, mean that epiliterate people—like artists—are sourcing and combining different elements of experience and expression in different ways. They are actively involved in their own learning trajectory while pursuing their own response to challenges, problems or opportunities. They seek out information or skills to address their particular expressive desires in particular contexts. In the digital world, expertise does not reside in set edifices and locations, but is dispersed, and often localised. Seeking out and employing expertise in a 'just in time' way characterises the processes of meaning-making in both the artistic and digital worlds.

Being present in digital spaces is a growing phenomenon; and storytelling through video, podcasts, and games involves participation as a performer—or avatar. Increasingly the embodiment of characters in digital games and learning spaces invites children into scenarios where they view the world from their character's perspective. The 'performing arts' (dance, drama and music), offer familiar forms for children's learning through embodied expression and communication. In many online games, an immersive experience involves role playing and improvisation. These practices, whereby children learn by inhabiting or becoming a character, are traditionally found in drama activities. In immersive digital spaces children are often engaged with other participants and "collaboratively theorise about manipulating entirely new worlds" (Jenkins et al., 2006, p. 30). Again, in dance, drama and music, performers work collectively to realise a shared vision within a world they are creating and bringing into being.

The Nature of Arts Learning Experiences

In the Australian education context, the Arts Learning Area (Dance, Drama, Media Arts, Music and Visual Arts) is a mandated, educationally-rich curriculum from the Foundation year of schooling. Arts learning is also an important dimension of well-designed early childhood programmes. Despite this, the arts are likely to be present in the classroom in the form of 'directed production' activities such as holiday decorations and cards (Narey, 2009). This misunderstands and misrepresents the arts and their significant role in children's learning, whereby the arts are understood as semiotic systems for making ideas manifest in symbolic form (Gardner, 1999; Lowenfeld, 1947; Lowenfeld & Brittain, 1987; McArdle & Wright, 2014). In authentic arts learning experiences, children will construct knowledge within social and cultural contexts and make meaning through their explorations (Dinham, 2020; Dinham & Chalk, 2018; Narey, 2009; Wright, 2012).

Authentic arts learning is quintessentially play-based learning in that it is active, experiential and participatory; challenging and intellectually stimulating; open-ended and exploratory; supportive of imaginative engagement and interpretation; intrinsically motivating; pleasurable; and meaningful to the children involved (Dinham & Chalk, 2018). This reinforces its value in young children's learning.

In the Foundational year of the Media Arts curriculum, children are expected to use media technologies to capture images, sound and text. Working individually or collaboratively they are involved in telling their own stories in visual and multimedia forms. The curriculum asks that children learn the conventions of multimedia authorial, social and ethical practices, along with how to use equipment correctly and safely; and to reflect on the nature of media arts products and their cultural significance. Children's reflections may relate to their own creations, those of their peers, or those of experienced arts practitioners.

Learning activities for children include telling their stories in forms such as posters, comic strips, photo stories, digital storybooks, stop-motion animations,

podcasts and videos. As children progress through the Media Arts curriculum, they are learning to be *creators* in the digital realm, as well as informed consumers.

Children's Storytelling in Media Arts

For the early childhood educator, an arts-integrated curriculum is a practical and play-based way of introducing children to many of the literacy practices of a digital world, because of the nature of arts learning and the emphasis placed on children telling their own stories in different modes. Some arts practices don't necessarily employ digital technologies but they help develop the epiliterate mindset. In Media Arts for example, the comic strip, which has been around for 400 years, introduces children to core concepts for telling stories in other multimodal forms such as digital storybooks and videos. Furthermore, since drawing is a significant 'first language' thereby enabling pre-literate children to make their ideas manifest (Lowenfeld, 1947; Lowenfeld & Brittain, 1987; McArdle & Wright, 2014)—the image-based nature of comics means they make an ideal entry point for young children.

The comic strip format and the causal or chronological sequence of events introduces the developmental challenges of thinking multimodally (image and text), episodically, and temporally. Since the narrative arc and plot of a comic strip is analogous with written narratives, the creation of comic strips lays foundational concepts for reading and writing (McArdle & Wright, 2014) as well as for digital storybooks and video creations. The comic-strip has its codes and conventions such as the iconic speech bubble, first used by Richard Outcault in *Yellow Kid* (1895), so learning how to use these, (the language), prefigures the codes and conventions children will learn to use with other communication formats such as the digital storybook or video.

In the same way that educators introduce children to planning for written storytelling (beginning, middle and end), so they can introduce children to planning for multimodal storytelling using a storyboard. Storyboards are a planning staple of the movie industry. Each shot in a film production is pictorially described in sequence, with relevant production notes, so for children it assists in refining a story's arc (for a comic strip) and telling it within a limited number of slides (for a digital storybook); and it underpins the organisation required when creating videos where there are separate production roles (cameraperson, audio, props).

Digital storytelling (using familiar PowerPoint® software) extends children's written storytelling through the use of images, text and a range of affordances. Children can curate images from the internet, photograph their own drawn, painted or collaged pictures, take photographs or copy existing ones. As with poster-making, they are learning many principles of graphic design as they consider how to arrange the components of image, graphics (such as lines, arrows) and text (font, size, colour and placement) to convey the message. Digital storytelling also introduces the possibilities of using different transitions between slides, sound effects, music, voice-over, staged release of components, and timing in the story's telling.

Stop-motion animations in the vein of *Wallace and Gromit* are created by stringing together a sequence of still-images that capture the progressive stages of physical actions. For young children these are more cognitively demanding than videos because the sequence of still-images required to create the appearance of movement extends outside the narrative arc of the story. In a study of 4 years old children's storytelling using stop-motion animation techniques (Marsh, 2006), it was observed that while a number of children used the technology to photograph sequences of images in an episodic comic-book style, one child demonstrated a nascent understanding of the animation concept in her creation. When the educator demonstrated an animation sequence, the child was able to independently create 23 more still-images, which, when sequenced, produced the effect of movement.

In other examples, Year Two children working in pairs demonstrated successful mastery of stop-motion animation concepts and processes using Claymation. Creating the images using three-dimensional objects such as matchbox cars and figurines in a self-constructed stage is conceptually easiest for children to master. When figures are created in clay or plasticine (Claymation) and remodelled by the child for each still image, the challenge is greater, but easier than drawing images to create the set of stills because the physical manipulation of the figurines mimics the way children manipulate toys in the physical world to animate them, such as walking a doll by manipulating its legs.

An important aspect of arts education is children's participation as audience members—including being an audience for their peers. Children's comic strips can be photocopied and added to the class library. In the same way educators use story-time to introduce young children to the conventions of children's books and story structures, they can introduce children to the conventions of comics and digital stories. Besides reviewing professional examples, the considered review of children's own creations acknowledges children as competent and valued participants in the world of ideas.

The Educator's Role

A recent survey by Early Childhood Australia revealed that only 13% of respondents believed early childhood centres were satisfactorily integrating technologies into play-based learning; and that many early childhood educators struggled with the concept (Edwards et al., 2018). However, as is argued in this chapter, children's rights to be competent and active participants in a digital world—with agency, voice and influence (Broström, 2012)—can be addressed within an arts-integrated programme where children's exploration, self-expression and storytelling are in focus; and where using the multimodalities offered by digital technology are easily incorporated.

The ArtsIN Framework (Hartle et al., 2015) conceptualises the educator's primary roles in an arts-integrated model of learning. There are five roles the educator plays: artist, researcher, designer, co-constructor, and advocate. Configuring this

model specifically for integrating media arts in early childhood education provides a meaningful pedagogical approach for educators to adopt.

Artist: The concept of being co-learners with children highlights the importance of educators developing their own artistic capabilities and habits of mind. Undertaking professional development with the guidance of experienced artists or embarking on individual projects are valuable ways for educators to position themselves in the arts learning space. All educators are familiar with PowerPoint software, so a personal project to develop a children's digital storybook (as a teaching resource) means the educator is positioned within the experiential and creative space where learning is gained from direct experience. This develops the educator's skills, confidence and mindset in ways that align to epiliteracy principles.

Researcher: By being an engaged creative practitioner, educators develop experientially-driven understandings of the nature of artistic expression. This leads to a new appreciation of children's artistic and creative engagement; and the way it narrates their belonging, being and becoming. Through careful observation and reflection, educators can see how children are "experts on the subject of their own lives" (Broström, 2012, p. 261) and how children's voices and viewpoints enter the learning space in informative ways through their creative productions. This helps support the educator-researcher's recognition of the data that reveal the learning embedded in children's digital media arts creations.

Designer: As educators, through their own professional development and artistic engagement, become aware of the possibilities for creating and communicating in media arts contexts themselves, the possibilities for children-led explorations and creative inventions using the affordances of digital media become more apparent. Through well-designed media arts experiences, children will have opportunities to tell their own stories, develop interview and performance techniques for podcasts and videos, develop technical multimodal communication skills, and exercise critical thinking as they respond to the creations and stories of others.

Importantly, many digitally-based practices replicate or extend existing early childhood practices. For example, presenting children with a set of photographs that document the stages of a cooking process or the growth of a plant from seed, and asking children to sort them into chronological order, is a first step towards sequencing events in a narrative. It is also a step into a digital world where images have an enhanced role in storytelling. The parallels with picture books—and the way educators develop children's capacity to 'read' the pictures, make judgements from pictorial clues about the characters, and predict the next event—provide a pedagogical bridge into photographic storytelling. When young children are encouraged to tell their own stories on the topic of *My family* or *My favourite places in the garden,* by photographing and curating images, educators are supporting them to research, make decisions, organise their ideas, exercise judgement, and express their understandings, using media.

Co-constructor: With an emphasis on children expressing their own ideas and meaning-making, the educator's role in the learning process is one of a co-constructor who stimulates, challenges and stretches children's thinking. An important way of doing this is presenting open-ended challenges. This shifts the

educator's role from directing the learning process towards a prescribed goal to one aimed at launching projects that invite creative thinking. This shifts the focus to brainstorming-type activities, research strategies, and experimentation; as well as exploring the inherent potential of different 'making' materials and processes; and developing understandings of the different forms of representation—the elements, codes and conventions. For example, in media arts, the point-of-view of the camera angle—looking down or looking up at the subject—conveys different messages about the power or significance of the subject.

The pedagogical shift towards supporting creative thinking places emphasis on the first two stages of the creative process, as identified by Wallas (1926). In the first of these, the Preparation stage, attention is given to expanding understanding of the problem or challenge. Brainstorming is a classic strategy but so too are strategies such as researching the concept, and viewing a range of visual stimuli. For example, a project about fish would include viewing images of different fish from colourful reef fish to deep sea monsters so that the initial idea of a fish is fully fleshed out. The second, Incubation stage of the creative process, is where ideas have time to percolate. Besides allocating time for ideas to resolve, this stage also includes active experimenting undertaken in a free-flowing way. In this stage of the creative process, artists play with different materials and different configurations. They generate testers, samples and models. Nothing is fixed but playing with the materials generates its own insights. As with the emergent curriculum model familiar to early childhood educators, the educator's role is to be responsive to the needs that emerge, or the possibilities that arise, from children's investigations.

Advocate: Engagement in authentic personal learning provides educators with a foundation for research and data-driven evaluations of children's learning. It promotes the design of meaningful learning opportunities that engage the educator as a co-constructor of learning through the adoption of appropriate pedagogical strategies for supporting children's construction of their own learning. This experience enables educators to become advocates when their "strong communication skills in multiple literacies provides courage of conviction and ability to take risks in new venues and environments" (Hartle et al., 2015, p. 296).

Conclusion

The significance of the transformational effects of the digital world cannot be underestimated. As with the transformation from oracy to a text-based world, new ways of constructing meaning and participating in the world are unfolding before us. The term epiliteracy is used here to conjure new ways of thinking, learning and participating in the multimodal digital world across interpersonal, social and cultural networks. The propositions made in this chapter are that the essence of epiliteracy can be found in the artist's habits of mind and creative practices; and that media arts experiences, as part of the Arts Learning Area in the school curriculum, provide a pedagogical bridge into the digital world for the early childhood educator.

Importantly, the principles of authentic arts education support the agency of children as competent communicators, whose ideas and views of the world are sought and valued, and whose rights to be creative participants in a digital world, are axiomatic. For early childhood educators, the five roles nominated in the ArtsIN Framework show how to support children's creative learning and active participation in digital spaces; and their development as epiliterate individuals.

References

Barr, R. (2019). Growing up in the digital age: Early learning and family media ecology. *Current Directions in Psychological Science*. https://doi.org/10.1177/0963721419838245.

Bourriaud, N. (2006). *Relational aesthetics* (rev. ed.) (S. Pleasance and F. Woods, Trans.). Adriana Hidalgo Editoria.

Broström, S. (2012). Children's participation in research. *International Journal of Early Years Education, 20*(3), 257–269.

Dezuanni, M. (2018). Minecraft and children's digital making: Implications for media literacy education. *Learning, Media and Technology, 43*(3), 236–249.

Dinham, J. (2020). *Delivering authentic arts education* (4th ed.). Cengage.

Dinham, J., & Chalk, B. (2018). *It's arts play: Young children belonging, being and becoming through the arts*. Oxford University Press.

Edwards, S., Straker, L., & Oakey, H. (2018). *Discussion Paper: Towards an Early Childhood Australia statement on young children and digital technology*. Early Childhood Australia Digital Policy Group. http://www.earlychildhoodaustralia.org.au/wp-content/uploads/2017/08/ECA-DPG-Disussion-Paper-April-including-appendices_FINAL-2.pdf.

Efland, A. (1995). The spiral and the lattice: Changes in cognitive learning theory and their implications for teaching and learning in the arts. *Studies in Art Education, 36*(3), 134–153.

Gardner, H. (1999). The happy meeting of multiple intelligences and the arts. *Harvard Education Letter, 15*(6), 1.

Gibson, J. J. (1986). *The ecological approach to visual perception*. Psychology Press.

Hartle, L. C., Pinciotti, P., & Gorton, R. L. (2015). ArtsIN: Arts integration and infusion framework. *Early Childhood Education, 43*, 289–298. https://doi.org/10.1007/s10643-014-0636-7.

Hilbert, M. (2011). The end justifies the definition: The manifold outlooks on the digital divide and their practical usefulness for policy-making. *Telecommunications Policy, 35*(8), 715–736. https://doi.org/10.1016/jtelpol.2011.06.012.

Hodge, R., & Tripp, D. (1986). *Children and television*. Polity Press.

Hopkins, J. (2016). The concept of affordances in digital media. In H. Friese, G. Rebane, M. Nolden, & M. Schreiter (Eds.), *Handbuch soziale praktiken und digitale alltagswelten* (pp. 1–8). Springer. https://doi.org/10.1007/978-3-658-08460-8_67-1.

Huber, A., Dinham, J., & Chalk, B. (2015). Responding to the call: Arts methodologies informing 21st century literacies. *Literacy, 49*(1), 45–54.

Institute for Culture and Society, UWS. (2014). *United Nations rights of the child in the digital age*. https://www.westernsydney.edu.au/ics/news_and_media/news/2014/united_nations_right_of_the_child_in_the_digital_age.

Jenkins, H., Clinton, K., Purushotma, R., Robison, A. J., & Weigel, M. (2006). *Confronting the challenges of participatory culture: Media education for the 21st century*. MacArthur Foundation.

Kress, G. (2003). *Literacy in the new media age*. Routledge.

Lowenfeld, V. (1947). *Creative and mental growth*. Macmillan.

Lowenfeld, V., & Brittain, W. L. (1987). *Creative and mental growth* (8th ed.). Pearson.

Marsh, J. (2006). Emergent media literacy: Digital animation in early childhood. *Language and Education, 20*(6), 493–506. https://doi.org/10.2167/le6660.0.

McArdle, F., & Wright, S. M. (2014). First literacies: Art, creativity, play, constructive meaning-making. In G. Barton (Ed.), *Literacy in the arts: Retheorising learning and teaching* (pp. 21–37). Springer.

Narey, M. J. (2009). Introduction. In M. J. Narey (Ed.), *Making meaning: Constructing multimodal perspectives of language, literacy, and learning through arts-based early childhood education* (pp. 1–2). Springer.

Ohler, J. (2008). *Storytelling and new media narrative*. http://www.jasonohler.com/storytelling/storymaking.cfm.

Ohler, J. (2010). *Digital community, digital citizen*. Corwin.

Orr, S., & Shreeve, A. (2017). *Art and design pedagogy in higher education: Knowledge, values and ambiguity in the creative curriculum*. Routledge.

Peers, C., & Fleer, M. (2014). The theory of 'belonging': Defining concepts used with belonging, being and becoming – the Australian early years learning framework. *Educational Philosophy and Theory, 46*, 914–928. https://doi.org/10.1080/00131857.2013.781495.

Perkins, D. (2007). Foreword. In L. Hetland, E. Winner, S. Veenema, & K. M. Sheridan (Eds.), *Studio thinking: The real benefits of visual arts education* (p. v). Teachers College Press.

Postill, J., & Pink, S. (2012). Social media ethnography: The digital researcher in a messy web. *Media International Australia, Incorporating Culture & Policy, 145*, 123–134. http://search.informit.com.au/documentSummary;dn=992474822836114;res=IELLCC.

Ribble, M. (2015). *Digital citizenship in schools: Nine elements all students should know* (3rd ed.). International Society for Technology in Education.

Royal Children's Hospital, Melbourne. (2017). *Australian child health poll: Young children owning smartphones is the new normal* [Press release]. www.rchpoll.org.au/media-centre/.

Short, G. (1995). Understanding domain knowledge for teaching: Higher order thinking in pre-service art teacher specialists. *Studies in Art Education, 36*(3), 154–169.

Singer, D. G., Singer, J. L., & Zuckerman, D. M. (1981). *Teaching television: How to use TV to your child's advantage*. Dial Press.

Stokol, D. (2018). *Social ecology in the digital age: Solving complex problems in a globalized world*. Academic Press.

Third, A., Bellerose, D., Dawkins, U., Keltie, E., & Pihl, K. (2014). *Children's rights in the digital age: A download from children around the world*. Young and Well Cooperative Research Centre.

Wallas, G. (1926). *The art of thought*. Harcourt Brace.

Wright, S. (Ed.). (2012). *Children, meaning-making and the arts* (2nd ed.). Pearson.

Zuckerman, D. M., & Zuckerman, B. S. (1985). Television's impact on children. *Design for Arts in Education, 86*(6), 39–45. https://doi.org/10.1080/07320973.1985.9940727.

Judith Dinham is Associate Professor, School of Education, Curtin University. Her discipline area is the arts. Her widely adopted university textbook written with Beryl Chalk, It's Arts Play: Young children belonging, being and becoming through the arts (OUP, 2018), positions the arts, including media arts, in contemporary early childhood education.