



EARLY CHILDHOOD AUSTRALIA'S

Statement on young children and digital technologies



**Early Childhood
Australia**
A voice for young children

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Early Childhood Australia's (ECA) vision is that every young child is thriving and learning. To achieve this, we champion the rights of young children to thrive and learn at home, in the community, within early learning settings and through the early years of school. Our work builds the capability of our society and the early childhood sector to realise the potential of every child during the critical early years from birth to the age of eight. ECA specifically acknowledges the rights of Aboriginal and Torres Strait Islander children and their families, and the past and current injustices and realities for them around Australia.

Further information about the *Statement on young children and digital technologies* and associated resources can be found at: www.earlychildhoodaustralia.org.au/digital-tech-statement

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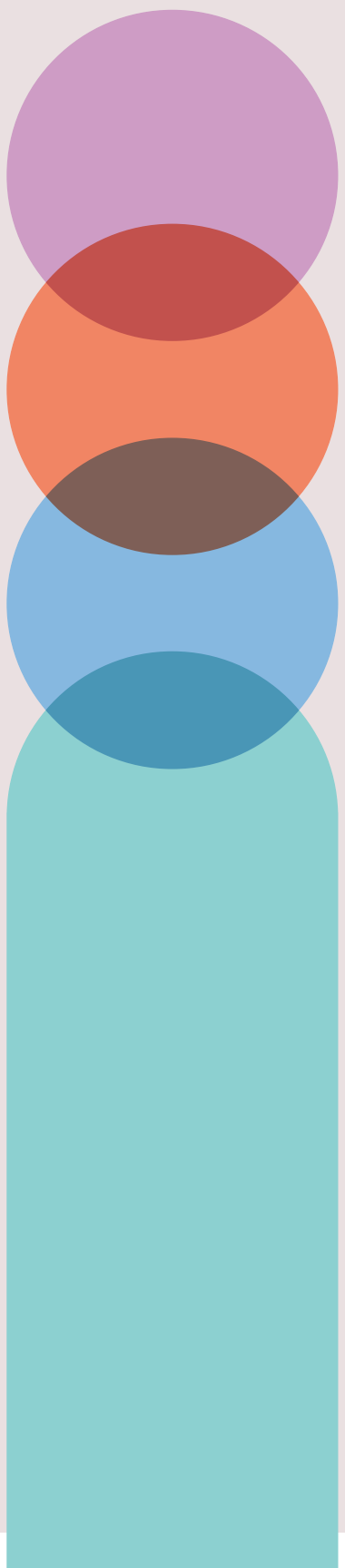
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Foreword



As the CEO of Early Childhood Australia (ECA), it is my honour to write this foreword. ECA is the peak early childhood advocacy organisation, acting in the interests of young children, their families and those in the early childhood field. ECA advocates to ensure that every child is thriving and learning. We do this by supporting teachers and educators across Australia to engage with evidence-based resources in all aspects of practice.

The first *ECA Statement on young children and digital technologies* was developed in response to an identified need for guidance for early childhood professionals on the role and optimal use of digital technologies with, by and for young children in early childhood education and care settings. The Statement, published in 2018, was developed in consultation with a Digital Policy Advisory Group, which comprised representatives of Australian-based organisations and academics with an interest and expertise in young children and digital technologies.

The first Statement has had a considerable impact. It has been downloaded over 6,100 times and cited extensively in research both in Australia and internationally. Further, in a recent survey of our sector, with participants from around the country, 98% of those who had used the Statement reported it was helpful and 82% confirmed that it had changed their perspectives regarding young children and digital technologies. This integral role in research, policy and practice matters to ECA.

Given the evolution in contemporary technologies, it is timely to review this work—as children, their families and educators live, play, learn and work in increasingly complex digital contexts, including internet-based technologies, automated systems, extended realities, robotics and Artificial Intelligence (AI) applications. This revised *ECA Statement on young children and digital technologies* maintains the commitment of the first version to provide guidance to early childhood educators and teachers that informs the optimal use of technologies in the education and care of young children in connection with their families and community.



Samantha Page

Chief Executive Officer, Early Childhood Australia

Introduction

The revised ECA *Statement on young children and digital technologies* has been updated in consultation with a Digital Policy Advisory Group, with representation from leading Australian organisations and contributions from experts in early learning and digital technologies.



Like the first version of the *ECA Statement on young children and digital technologies*, this revision was informed by sector consultation, published research and expert advice from within Australia and internationally. Extensive sector engagement included a national online survey and a participant-based workshop at the 2024 ECA National Conference. Young children were also consulted on their perspectives about digital technologies in early childhood education and care settings (Danby et al., 2025).

Expert advice was sought regarding young children and digital technologies in areas including relationships, health and wellbeing, citizenship, and play and pedagogy. In addition, reviews of specifically relevant literature were consulted, including canvassing digital play (Chu et al., 2024), child development and technology use (Arabi et al., 2023), digital technology use in early childhood education and care settings (Undheim, 2022), early language, literacy and digital technologies (Liu et al., 2024), and Artificial Intelligence (AI) in early childhood education and care (Su & Yang, 2022).

This Statement is intended to support the professional practice, learning and reflection of early childhood educators working with young children aged birth to eight years in Australian early childhood education and care settings, including long day care, kindergarten/preschool, pre-prep, occasional care, family day care, the first years of school and/or outside school hours care. The term 'educator' is used throughout to include early childhood teachers, educators and support staff who work directly with children to promote learning, development and wellbeing in early childhood settings. The Statement may also be of interest to allied professionals, such as those in health, community or social services working with young children and their families.

The national and international policy context

The *Statement on young children and digital technologies* aligns with existing Australian and international policy documents and guidelines about young children and digital technology. These include Australian documents relevant to children's education and care settings that commit to ensuring all Australian children receive quality and safe early childhood education, such as the *Mparntwe Education Declaration* (Education Council, 2019), the *Early Years Learning Framework (V2.0)* (EYLF V2.0) (AGDE, 2022), the *National Model Code* (ACECQA, 2024), and the *National Principles for Child Safe Organisations* (AHRC, 2018). Both the *Mparntwe Education Declaration* and the EYLF V2.0 reference learning to use digital technologies for full and active participation in society. The *National Model Code* and the *National Principles for Child Safe Organisations* recommend child-safe practices in taking, sharing and storing digital images and video of children in ECEC services.

This Statement recognises national and international health guidelines and policies on movement and child health and wellbeing, including the *Australian 24-Hour Movement Guidelines for the Early Years (Birth to 5 Years)* (Australian Government Department of Health, Disability and Ageing, 2021); the American Academy of Child and Adolescent Psychiatry's *Screen Time and Children* (2025); Singapore's *Guidance on Screen Use in Children* (Ministry of Health Singapore, 2025); the South African *24-Hour Movement Guidelines for Birth to Five Years* (Draper et al., 2020); and the World Health Organization's *Guidelines on Physical Activity, Sedentary Behaviour and Sleep* (2019). These documents focus on the implications of digital technologies on children's physical and mental health.

ECA is not the first organisation to develop a statement about young children and digital technologies. Foundation statements include the National Association for the Education of Young Children (NAEYC) and Fred Rogers Center (2012)

'I like searching for things and learning.'
(Haley, 6 years)

position statement on *Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8*; and the International Literacy Association (2019) position statement *Digital Resources in Early Childhood Literacy Development*, both of which provide research-informed advice about young children using digital technologies in American early learning settings. *The Impact of Media and Digital Technology on Children and Adolescents* (RANZP, 2018) provides a health-based perspective on digital technology use for children and young people.

Finally, this Statement sits within the context of the *ECA Code of Ethics* (2016), United Nations *General Comment No. 25 on Children's Rights in Relation to the Digital Environment* (2021), and UNICEF *Child Protection in Digital Education* (2023). These documents provide a rights-based perspective for thinking about young children and digital technologies.

Why a Statement on young children and digital technologies?

Young children today are growing up in digital contexts (Jandrić & Knox, 2022). Digital contexts involve people in the design and use of digital technologies for a range of purposes. Digital technologies are different from other types of technology, such as analogue technologies (e.g. film-based photography, painting, drawing) or mechanical technologies (e.g. gears, levers, wheels). Digital technology is based on the use of small microprocessors or 'chips' that convert information into numbers or 'digits'. Today, the types of digital technologies used by people in daily life include computers, tablets, smart televisions, smartphones, robots, biometrics, automated systems, voice assistants, extended reality and AI. Digital technologies are usually connected, enabling people and AI to share, communicate, store, retrieve and manipulate digital data using the internet for education, entertainment, recreation, organisational and work purposes.

Young children and their families participate in digital contexts according to the access they have to digital technologies and the internet, and the views they hold about the relevance and role of digital technology in their lives. Research shows that digital technology and internet access for children and families is influenced by cultural background, socioeconomic resources, geographic location, gender, age and personal beliefs about technologies (Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts, 2024; Lythreatis et al., 2022). A lack of access to technologies and the internet—such as in regional and remote areas—and a lack of knowledge on how to use technologies, can hinder the fair and equitable participation of children and families in society. For example, families who have access only to an internet-connected mobile phone tend not to read, write and create information and content that promotes children's learning compared to families that have access to computers (Reisdorf et al., 2020). Adult beliefs about digital technology are also important because they influence how, when and where young children use technologies. Access and adult beliefs about technologies mean the experience of growing up in digital contexts is not universally the same—not every child, family and service will use, value or understand digital technologies in the same way.

How people use, value and understand digital technologies can depend on the views they hold about the relationship between digital technologies and society. The different views people have about digital technologies are informed by a body of knowledge called 'Philosophy of Technology' (An & Oliver, 2020). One viewpoint, called 'technological determinism', considers that technology will cause or 'determine' what happens to people in society. People can have differing stances on how technology determines social outcomes. For example, an educator might think that children's play is negatively influenced by their consumption of digital media, or that children's learning is positively influenced by using an educational app.

'Sometimes I play on my iPad and my sister plays on hers.'
(Maia, 8 years)

Another way of thinking about the relationship between digital technologies and society is known as 'substantive'. This viewpoint argues that digital technologies become part of how society operates and that often people do not notice the actual technology but focus on the social aspects of use. For example, when using a mobile phone, people do not always think about the actual object; they are more focused on how it allows them to communicate through video-chat, talking, texting or sharing images and content.

The relationship between digital technology and society can also be understood using a 'critical perspective', which argues that technologies are always created and used by people with values in mind. The values that people bring to how they use technologies can impact end-users in different ways. For example, assistive technologies for young children such as screen-readers are designed and used in practice to support children who may not otherwise be able to read or view a screen to access digital content. In this example, the value informing technology design and use is one of inclusion. However, not all values informing technology design are in the best interests of children. For example, some games designed for young children are intended to generate profit for their owners and can be overly attention-grabbing and difficult for children to stop playing. In this example, the value informing technology design and use is one of commercialisation.

These ways of thinking about digital technologies highlight that there is no simple answer to understanding the role and optimal use of digital technologies with, by and for young children in early childhood education settings. Children and adults are involved in using technologies in diverse digital contexts. Digital contexts include the access people have to digital technologies in their lives and how they think about and understand digital technologies. Thinking about and understanding digital technologies can provide a basis for educator decision-making about digital technology use with, by and for young children.

A Statement on young children and digital technologies can benefit the early childhood sector by providing an evidence base on which educators can make decisions regarding young children and digital technologies that are relevant to the digital contexts experienced by children and their families. Instead of applying 'one-size-fits-all' advice, a decision-making approach recognises that early childhood educators are skilled at working in partnership with children, families and community in the best interests of the child.

This Statement therefore provides an overview of existing research about young children and digital technologies in four known areas of importance (Mantilla & Edwards, 2019). These are:



Relationships



Health and wellbeing



Citizenship



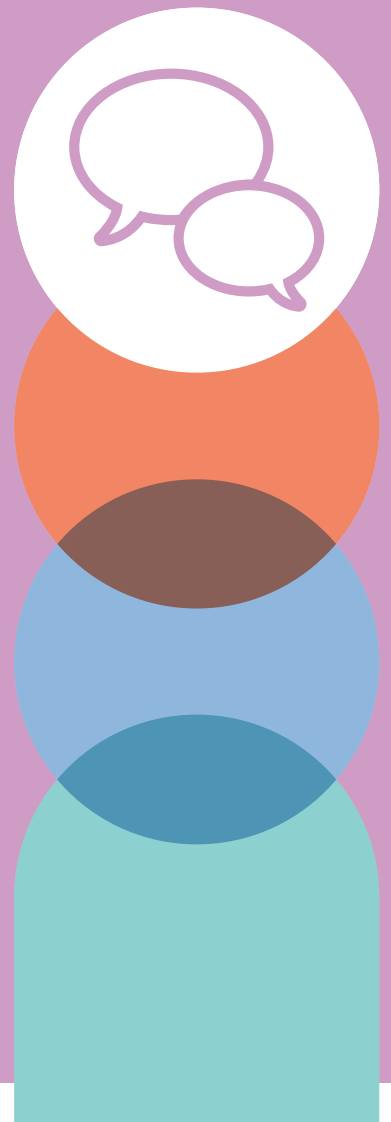
Play and pedagogy

These areas are also identified in research and policy as important considerations in the learning and development of young Australian children, informing the EYLF V2.0 (Barblett et al., 2021). Each of the four areas canvassed in this Statement is accompanied by a guiding principle and practice advice. The principles and practice advice are intended to facilitate professional reflection (AGDE, 2022) by educators on the role and optimal use of digital technologies with, by and for young children, according to the digital contexts in which young children, their families and educators play, live and work.

PART 1 Relationships

Young children in digital contexts interact, engage, access and learn how to use digital technologies in relationship with other people, including the adults (e.g. family members, parents, kinship members, educators) and peers (e.g. friends, siblings, extended family members) in their lives. These relationships facilitate and influence children's engagement with digital technologies.

The guiding principle for Relationships is: Young children's relationships with adults and peers matter in digital contexts.



1.1 Children, adults and digital technologies

Positive child–adult relationships are well recognised as essential to children's healthy development and learning (Osher et al., 2021). Research shows that it is through the formation of relationships and attachment with caregivers that children develop cultural competence, a sense of identity, language skills, and knowledge about the world around them (Frosch et al., 2019). In building relationships with young children, adults play a key role in modelling skills and sharing cultural knowledge about social behaviours—including behaviours that involve the use of digital technologies.

Digital technologies can be used to support positive child–adult relationships. For example, adults and children can share positive experiences by co-viewing and discussing digital media content and playing digital games together (Toh & Lim, 2021). Infants and toddlers often enjoy looking at digital photographs and videos of themselves, family members and peers. These images and videos can be revisited by educators and children to promote opportunities for collaborative language development. Using technologies together with adults helps young children to understand that digital technologies can be used to facilitate communication within person-to-person relationships (Stuckelman et al., 2023).

Young children can also use digital technologies for purposeful communication in their relationships with adults, by sending and receiving digital photos, sharing social media with adults, or creating text messages and emails. Research shows that using digital technologies for video communication can be socially beneficial for young and very young children (Glick et al., 2022). Many children maintain relationships with geographically distant family members or other important people in their lives using video-chat or messaging (Hood, 2024; Johnson & Rogers, 2023).

While children can benefit from co-using digital technologies with adults, it is important that adults model person-to-person relationships that do not always involve using digital technologies and moderate their own use of digital technologies. Research shows that when adult family members are distracted by digital technology when with their children, they are less attentive and responsive to their child (Komanchuk et al., 2023). Attentive engagement is a fundamental part of relationship-building between children and adults. For example, in early childhood education and care settings, educators should avoid using digital documentation platforms during routines with infants and toddlers, such as meal or sleep times. If adults are preoccupied with their own digital technology use, this may reduce the quality of the child–adult interaction.

Adults can model self-regulated digital technology use during sustained social interactions with children. During sustained interactions, adults and children listen to, respond to, and pay attention to each other (Reyhing & Perren, 2023). For example, when sharing stories, cultural rhymes or going on a walk with young children, adults can have conversations with children that build language and social skills—without checking their digital devices. Modelling self-regulated digital technology use helps children learn that people can make active decisions about how, where and when they engage with digital technologies. It is appropriate for children and adults to focus on person-to-person interactions that do not always involve digital technologies.

'Adults play a key role in modelling skills and sharing cultural knowledge about behaviours that involve the use of digital technologies.'

Interacting with digital technologies by voice is available to children in internet-connected toys as well as conversational agents in smart speakers, tablets and smartphones (like Siri and Alexa). AI can make these verbal interactions feel like interacting with another person. When children interact with conversational agents, they might form what are called 'parasocial' relationships. Children often have parasocial relationships with fictional characters from their preferred popular culture experiences that offer socioemotional connections (Bond et al., 2025). Research shows that children treat AI conversational agents as human-like and trusted social figures (Girouard-Hallam & Danovitch, 2022; Abbasi et al., 2024). Children's parasocial relationships with conversational agents or popular culture figures can provide benefits such as learning social interactions, developing empathy and experiencing a sense of belonging. However, it is important that adults help children understand that these conversational agents and popular cultural characters are not like their real, trusted adults.

1.2 Children, peers and digital technologies

Child-to-child relationships involve social interactions with same-age peers, older children, siblings and other young kinship members. These relationships help children develop social and emotional capacities such as interpreting the perspectives of other people, paying joint attention to a task or topic, self-regulating behaviour and improving impulse control (Osher et al., 2021).

Digital technologies can be used within child-to-child relationships in ways that create opportunities for social and emotional development. Many young children enjoy using digital technologies with others. Children are interested in sharing how they have learned to use digital technologies and will often actively teach each other the functions of different technologies (Nolan & Moore, 2025). During these interactions, children benefit from listening to others and appreciating that other people may have a different point of view.

In educational settings, educators can create opportunities for children to use digital technologies collaboratively. This could involve creating content, developing ideas and documenting learning. For example, two or more children might use a digital

microscope to examine natural materials found in the outdoor environment, then share these observations with their peers on a large display screen (Undheim, 2022). Drawing other children into the experience creates opportunities for discussion, to sustain thinking and revisit ideas. Learning to collaborate with technologies is an important 21st century skill.

Young children are usually able to touch, swipe and press touchscreens by 15 to 18 months of age (Ziemer et al., 2021). However, being able to use a device is not the same as being socially ready to collaborate with another person. Adults can help children with turn-taking, sharing and listening to others when co-using using technologies in the same way they help children learn pro-social skills in other activities, such as waiting for a turn on a tricycle, sharing a digging tool or having conversations about different points of view. Children's relationships with other children at home and in their communities influence how and why they use digital technologies. Research shows that younger children often learn digital technology skills by using technologies with their families. Early digital technology skills used by young children include turning devices on and off, taking photographs, recording videos, making phone calls, sending and receiving messages, and navigating media and game content. Family uses of technology where children learn these skills can include sharing devices, contacting friends and family members, helping others learn how to use an application or play a game, and seeking permission to take images or videos of others (Scott, 2021).

Younger children can also be exposed to social media and texting through the digital technology use of their siblings and older family members. When young children see other people using social media and texting, they may incorporate this into their own play scenarios. When children incorporate social media and texting into their role-play, educators can use this as an opportunity to help children learn about how digital technologies are used by people to communicate and share information. Building children's knowledge about how to participate in digital contexts through role-play helps children understand the safe and appropriate use of digital technologies with other people.

1.3 Educator and family partnerships

Strong partnerships between educators and families are important for young children's wellbeing and developmental outcomes. Research shows that collaboration between educators and families improves young children's social and emotional outcomes (Ma et al., 2016). Children benefit from observing their educators and families respectfully sharing information about their learning and their lives at home. Educators and families benefit from feeling heard and respected (Oke et al., 2021). Educators are accustomed to working in partnership with families in many areas of children's lives—from sleep and self-care routines through to behaviour and social skills. Now that young children are growing up in digital contexts, it's also important for educators and families to work in partnership regarding the use of digital technologies with, by and for young children.

All families have different perspectives on digital technologies. These perspectives may reflect the values parents and caregivers place on the role of digital technologies in their own lives, and those of their children. Family perspectives shape young children's access to, and experiences with, digital technologies at home and in the community (Lewis et al., 2023). Some families may view digital technologies as useful tools for accessing and enjoying digital content and information. Other families might prefer their children to have more limited interactions with technologies. Being aware of differing family perspectives helps educators consider the range of experiences young children have with technologies.

An important area of partnership between educators and families is regular communication about children's learning, development and routines when participating in educational settings (Murphy et al., 2021). For many years, educators have documented and assessed young children's learning and development (Cowan & Flewitt, 2021). This has taken the form of checklists, observations, work samples, videos and photographs, family discussions (Pyle et al., 2020) and Learning Stories (Carr & Lee, 2012). As social media has evolved, educators now frequently document children's learning using combinations of digital photographs, comments and videos (Stratigos & Fenech, 2020). The *National Model Code* (ACECQA, 2024) confirms educators who document children's

learning and development using visual and audio formats and share this with family members should only use service-owned devices. Using documentation apps can provide a flexible way for educators to communicate with families and provide opportunities to make learning in the service visible. While families may appreciate being able to see updates of their children's learning and activities on their mobile devices, they may not always feel comfortable adding comments to posts (Cowan & Flewitt, 2021). When using digital documentation platforms, educators should always consider the security of children's digital data and the privacy of children and families (Restiglian et al., 2023). Children's active participation in digital documentation is important to their learning about giving and respecting consent for the use of images online (Blaisdell et al., 2021). Educators and families should understand how digital data about children is being used, stored and shared.

Partnership also concerns how educators and families model digital technology use in front of children. For example, when children enter and leave early childhood education and care settings, adults may be involved in their own digital technology use. Using digital technologies when children are present can interfere with the adult's ability to provide children with attentive interactions. This can result in reduced language opportunities for children, children making increased bids for attention through higher activity levels, or lower levels of adult supervision of children (Komanchuk et al., 2023). Educators and families may consider developing policies or shared expectations about digital technology use during these periods. For example, services might decide that educators will not use digital technologies when children are entering and leaving a service so they can devote their full attention to welcoming and farewelling children. Services might share these expectations with families and encourage them to also avoid using digital devices at these times. Other services may consider these periods as opportunities for co-viewing children's digital documentation with families. This can create extended conversations between educators, children and their families about a child's learning and daily activities and promote reflection. Educators and families can work in partnership to make decisions about how and why digital technologies are used by adults during these situations.



Relationships

Principle: Young children's relationships with adults and peers matter in digital contexts

Practice advice:

01

Use digital technologies in early childhood education and care settings with children, peers and adults to promote and sustain social interactions.

02

Support children in turn-taking and learning to share when using digital technologies in collaboration with others.

03

Foster children's peer-to-peer interactions as opportunities for co-learning about and with digital technologies.

04

Model self-regulated digital technology use with children and families that recognises the importance of sustained social interactions between children and adults without technologies.

05

Help children to understand that digital assistants and popular culture characters are different from their trusted adults.

06

Invite children's active contribution to digital documentation and model consent for the use of digital images and videos online.

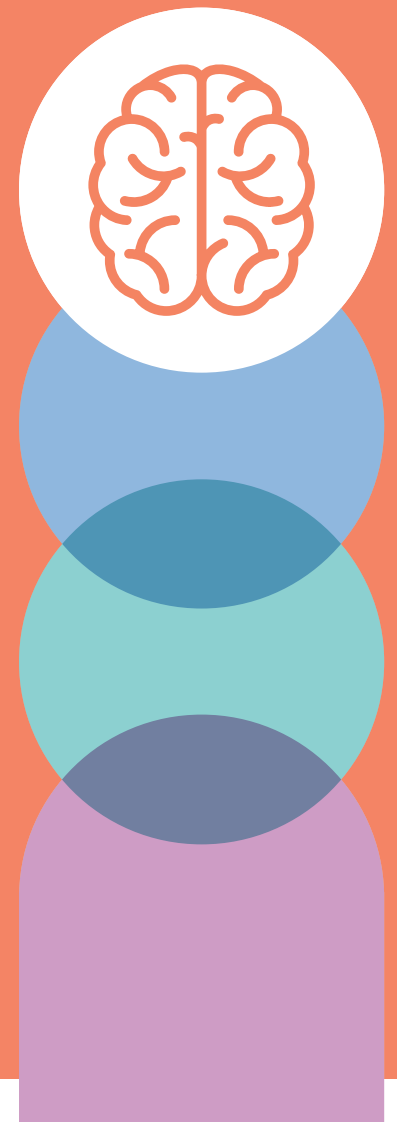
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Create shared understandings between families, educators and services about how adults use digital technology in front of children.

PART 2 Health and wellbeing

The way that young children interact, engage with and experience digital technologies can have positive or detrimental implications for health and wellbeing. This includes their physical activity, posture, vision, sleep and emotions.

The guiding principle for Health and Wellbeing is: Young children's health and wellbeing is actively supported in digital contexts.



2.1 Digital technologies and physical activity

Regular physical activity is important for young children's health and development (Active Healthy Kids Australia, 2022). Children benefit from physical activity that makes them breathe hard to stimulate their lungs, heart and blood vessels. Physical activity that uses energy from sugars and fats helps encourage a healthy metabolism. It also builds strength in children's muscles, joints and bones; challenges the coordination of hands, eyes and limbs; and delivers cognitive and social benefits.

Physical activity in infancy starts with activities like 'tummy time', which helps babies build strong neck muscles. These muscles are needed so that babies can sit and reach for objects and develop their trunk coordination. For older children, crawling, walking and running help develop the muscular and nervous systems that promote coordination and physical development.

Digital technologies can be used to support or provide whole-body movement opportunities for young children, which assist with physical development. These can include:

- playing with social robots, interacting with augmented reality, or playing electronic games using devices that require large movements (e.g. playing on an electronic dance mat)
- interacting with screen-based devices to research tasks or learning inquiries that involve physical activity (e.g. watching a video tutorial on how to prepare the soil when planning a vegetable garden, or using a video tutorial to learn a specific gross motor skill)
- using functions on mobile devices to record physical activity (e.g. recording activities such as jumping, skipping or climbing and re-watching these to refine learning of the skill and provide encouragement—slow-motion or timelapse modes offer opportunities for new perspectives on these skills)

- wearing technologies to measure levels of physical activity with children (e.g. measuring children's daily activity levels in the classroom when learning about health and wellbeing).

Virtual reality immerses children in a totally virtual world viewed through a headset. Virtual reality headsets should be used with caution as they may cause dizziness and feelings of disorientation (Kaimara et al., 2022), sore eyes, and the weight of the headset may cause neck discomfort (Kim et al., 2020) in young children. Augmented reality shows children the real world with a computer-generated image overlaid. Augmented reality can be viewed with a headset or on a hand-held tablet or smartphone. Educators may find hand-held augmented reality devices provide more natural opportunities for movement in the classroom or outdoors than virtual reality. When children use digital technologies for movement opportunities it is important that they develop an awareness of their physical surroundings, so they do not bump into other people or trip over objects in their environment. Children can learn when it is appropriate to use digital technologies and move around at the same time (e.g. avoiding screen use when walking in public places or listening to audio near roads or transport).

Digital technologies that incorporate handheld controllers, haptics (that respond to touch or motion), styluses and touchscreens require a certain degree of fine motor skill. There is some evidence that fine motor skills, such as pinching, dragging and pointing, may be developed using touchscreen technologies (Bonneton-Botte et al., 2020). It is important that young children also develop their fine motor skills by participating in three dimensional non-digital activities traditionally used in early childhood education and care settings, such as modelling with clay, threading and puzzles, managing clothing, learning to write, and using hands or utensils for eating. Children may feel discomfort if they do the same movement repeatedly, such as rapid tapping or swiping on touchscreen devices, leading to

decreased hand function (Radwan et al., 2020). Educators may consider avoiding digital activities that involve children performing rapid, repeated fine movements.

Young children do need periods of sedentary behaviour to rest and recuperate after participating in physical activity. Children routinely engage in sedentary behaviours during the day, for example, when listening to a story, sitting in a pram or travelling in a vehicle. However, too much sedentary time is not healthy for young children. Consuming digital media on screens or playing electronic games can involve long periods of sitting. High amounts of screen viewing by children has been shown to contribute to poor health outcomes, such as obesity and low bone strength (Li et al., 2020; de Lamas et al., 2021). It has not been established whether these outcomes are due to snacking in response to junk food advertising on television, the displacement of physical activity by screen viewing, or by the actual time spent sitting. Excessive sitting and long periods of uninterrupted sitting have been linked to poor physical and mental health in adults (Biddle et al., 2021), although this link is less evident for children (Renninger et al., 2020).

The *Australian 24-Hour Movement Guidelines for the Early Years* (Australian Government Department of Health, Disability and Ageing, 2017) advise against extended sitting for young children and against restrained sitting for more than one hour. They also recommend no sedentary screen-based digital technology use by children under two years of age, and no more than one hour per day of sedentary screen use by children aged two to five years. The guidelines also indicate that toddlers and preschool-aged children should spend at least 180 minutes of their awake-time being physically active every day. For preschoolers, this should include at least 60 minutes each day of energetic play that makes them 'puffed'. Energetic play involves activities such as jumping, leaping, dancing, chasing, swimming, digging, climbing and bike-riding. Encouraging children to be less sedentary and more physically active helps them develop lifelong health-promoting habits.

2.2 Digital technologies and posture

Children's physical flexibility, strength and coordination develop when they use different postures in their everyday activities. Children can use digital technologies in ways that promote different postures. For example, when children lie on their stomach to play with screen technologies they develop stronger back and neck muscles. Likewise, playing with digital technologies such as robots involves crawling and moving around on the hands and knees. This can help build stronger shoulder and hip muscles. Sitting with legs straight out in front while watching television encourages leg flexibility. Standing at a bench or low table while video-chatting with friends will provide opportunities for children to develop standing balance.

Maintaining the same posture for a long period of time can result in children experiencing physical discomfort. Young children will start to feel uncomfortable more quickly in postures that are awkward or near the end of movement, such as bending their neck while drawing, writing or using a touchscreen device. There is mixed evidence for whether neck pain and back pain are related to screen use (Baradaran Mahdavi et al., 2022; Guerra et al., 2023) and there is currently a lack of Australian Government health guidelines on posture for children. However, sustained and awkward postures, along with repetitive movements, are risk factors for musculoskeletal disorders in adults (Prasetya et al., 2024). Educators can offer children a combination of diverse technology-based experiences, such as coding or social robots, digital microscopes, and augmented reality to provide opportunities for various body positions while using technologies.

'Encouraging children to be less sedentary and more physically active helps them develop lifelong health promoting habits.'

2.3 Digital technologies and vision

Regular visual stimulation helps develop young children's eyes and brain. Infants develop focus, depth perception, facial recognition and tracking in the first year of life. Young children are also developing eye–hand and eye–body coordination to support fine motor and gross motor skills in the early years of life. Children's use of screen-based technologies such as televisions and touchscreens may have implications for vision development and coordination. These technologies provide flat visual targets that young children may find attractive and stimulating. However, the development of depth perception requires coordination of both eyes and interpretation in the brain. This development is supported by regular viewing of 3D objects (Ayzenburg & Behrmann, 2024).

When children are a few months old, they require opportunities to focus on objects positioned at a variety of distances. Spending too much time focused on something static very near may result in discomfort for children and limit opportunities for looking at objects that are different distances away. There is mixed evidence on whether too much screen use is linked to eye problems in children (Lanca & Saw, 2020). There is a concern that short-sightedness in children is associated with more frequent participation in near-vision activities (e.g. book reading, using computers, completing writing for schoolwork) (Harrington & O'Dwyer, 2023). However, available evidence suggests that short-sightedness is linked to insufficient exposure to sunlight, which can occur when children do not have enough opportunity to play outdoors (Mackey, et al., 2025).

Glare and reflection can make it difficult for children to see what is happening on digital screens and lead to eye discomfort. Educators should also consider the impact of screen glare and reflections when using digital technologies in educational settings.

2.4 Digital technologies and sleep

Sleep duration, quality, timing and regularity are critical for young children's healthy development. Children who have irregular sleep habits, do not get enough sleep every night, or frequently have interrupted sleep, are at risk of health and wellbeing problems. These problems include being overweight and obese, experiencing depression, and/or having poorer emotional regulation than those children who regularly experience better sleep (Dutil et al., 2022). The Australian Government recommends:

- 10–13 hours of sleep per day for three- to five-year-olds
- 11–14 hours per day for one- to two-year-olds
- 12–16 hours per day for babies aged four to 11 months
- 14–17 hours per day for babies aged birth to three months.

(Australian Government Department of Health, Disability and Ageing, 2021.)

Children's sleep can be affected by screen-based digital technologies. High amounts of screen viewing, especially before bedtime, can result in reduced quality and duration of sleep for children (Zhang et al., 2020; Mallawaarachchi et al., 2022). This effect may be partly due to bright light from screens influencing the release of sleep hormones. While children may be more sensitive to light than adults (Hale et al., 2024), recent evidence suggests light from screens has only a small impact on the time it takes for children to go to sleep (Bauducco et al., 2024). However, time spent on digital devices may displace time for sleep (Bauducco et al., 2024). Using digital technologies during time intended for sleep should be avoided. Expert consensus is that overly stimulating content viewed before sleep can impact on sleep (Hale et al., 2024).

2.5 Digital technologies and emotional wellbeing

Emotional wellbeing is critical for young children to thrive. Children experience positive and negative emotions. Learning to recognise and understand their different emotions helps children to manage their behaviours in social situations.

Children may associate using digital technologies with positive feelings. As with any non-digital activity, a child who is engaged with digital technology they are enjoying is likely to feel happy and satisfied. Children can also feel positive emotions when they achieve success with digital games, apps, voice activation or are interacting with digital content. Depending on the design of the digital activity, using digital technologies may help young children learn to concentrate on one task for an extended period, and can also provide opportunities for children to develop agency (Bittner, 2021).

While research shows that digital technologies can provide children with learning and development opportunities such as skill mastery, concentration and self-regulation, children can also become attracted to using digital technologies. Evidence of an association between using screen-based digital technologies and emotional control is mixed (Corkin et al., 2021). However, designers of digital games, apps and other digital technologies aim to create highly engaging experiences for users. These experiences can include tailored content or built-in rewards, such as digital game money. When children play games with built-in rewards, they may experience similar neural responses that adults have when gambling. Educators can teach children about some of the ways that apps and games can be specifically designed to keep people using them.

The immediate feedback experienced by children engaging with digital technologies can be enticing. When children experience frustration or disappointment within a game or are asked

by an adult to end their digital activities, this can lead to challenging behaviours (Coyne et al., 2021). Sometimes these behaviours are interpreted as 'technology tantrums' or a reluctance to participate in other non-digital activities. Early childhood educators recognise that leaving an absorbing activity is not always easy. In these situations, young children benefit from adults helping them with time-management strategies and emotional support. Establishing timeframes for technology use, providing children with some control over changing tasks, creating excitement for a non-digital activity, and helping children to plan when they can return to using technologies supports children with self-regulation (Zabatiero et al., 2024).

Adults can use digital technologies to distract children. This can be helpful in situations where children may need to be calm and patient. At other times, adults may use digital technologies to distract children from their feelings. While this can be a helpful short-term strategy, distraction from emotion is not the same as experiencing and responding to feelings (Coyne et al., 2021). Children may benefit from adult support to manage their feelings without using digital technologies.

Reviews suggest that high use of screen-based technologies has a small association with anxiety and depression in children (Eirich, 2022; Zou et al., 2024). However, it is not clear if this occurs because using screens leads to negative emotional outcomes for children, or if children who are already unhappy are attracted to using screens to manage their feelings (Neville et al., 2021). Young children will benefit from adult interaction to help them identify alternative activities to using screens. These may be non-digital activities such as drawing, building with blocks, or playing on climbing equipment outside. It could also involve using technologies that rely on children moving their bodies, such as playing with a robot or dancing to music. Digital technologies that promote physical activity can be helpful because there is a positive relationship between movement and mood (Li et al., 2022).



Health and wellbeing

Principle: Young children's health and wellbeing is actively supported in digital contexts

Practice advice:

01

Provide a range of digital and non-digital experiences for young children that help them move their bodies, including being outside in natural light using sun-safe practices.

02

Ensure children participate in non-digital activities to build strength and skills in their hands and fingers.

03

Ensure that screen-based digital technology use while sitting is only for short periods and does not replace periods of active physical movement.

04

Promote postural change by providing a variety of digital technologies that invite children to use their bodies in different spaces and at a range of heights.

05

Minimise screen glare and reflection and promote regular visual breaks with a variety of visual distances when using screen-based technologies.

06

Support families to promote screen-free sleeping areas and understand that exposure to disturbing or stimulating content, especially before sleep, may decrease the length and quality of children's sleep.

07

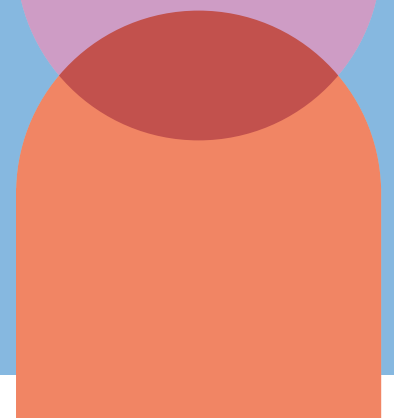
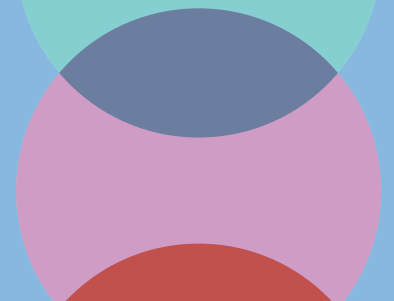
Help children develop self-regulation for using digital technologies and support them to transition between digital and non-digital activities.

PART 3

Citizenship

Young children are active citizens in the digital contexts in which they play, learn, live and grow. Citizenship invites children to respect their own rights and those of others, relate to their communities and to appreciate the diverse backgrounds and experiences of people. Children's digital rights, privacy and online-safety education provide a foundation for safe, fair and equitable participation in digital contexts.

The guiding principle for Citizenship is: Young children's citizenship is upheld and fostered in digital contexts.



3.1 Children's digital rights: use, access and participation

Across the world, many people use the internet as a primary means of participating in society. People use the internet to access and engage in education, employment, health, entertainment and political activities. Access to the internet is therefore recognised as an important human right that facilitates the social and economic participation of people in society (Reglitz, 2023). The United Nations (2021) *General Comment No. 25 on Children's Rights in Relation to the Digital Environment* advocates for 'meaningful' technological access, including internet access, that 'can support children to realise the full range of their civil, political, cultural, economic and social rights' (p. 1).

However, fair and equitable use and access to the internet is not available to all children. Socioeconomic status, geographical location, cultural background and gender influence internet use and access by children and families in ways that either support or reduce their capacity to participate in society (Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts, 2024; Lythreathis et al., 2022). For many children, their early childhood education and care setting may provide their primary opportunity to access and use the internet. This could be because they do not have any internet-enabled devices at home, internet access is not affordable, or they are geographically distant from stable internet provision. Meanwhile, technological innovations such as biometrics, Internet of Things, webcams, extended realities, AI and automated systems are part of the digital contexts children and their families may be part of, even when their own internet use and access is limited. For example, closed circuit television recording their activities in public spaces, automation used in social security decision-making, or early childhood education and care services using digital documentation to record personal information about children. Given the diverse experiences children and families have with

the internet and digital technologies, the concept of children's digital rights in early childhood education and care settings is becoming more accepted (AGDE, 2022). Educators can support children's agency and voice in safely using and accessing the internet and digital technologies (Danby et al., 2025).

3.2 Digital privacy

Digital privacy considers how people and their data are represented, stored and re-used on the internet—with and without personal permission. Digital privacy is a serious issue for young children who may be vulnerable to how their digital data is created and managed by adults. For example, a young child might view a digital photograph of themselves on screen as a source of immediate pleasure and delight. However, young children are not always aware of how images or videos of them are used by well-meaning adults, or how AI can also be used to manipulate or fabricate images. The *National Model Code* (ACECQA, 2024) confirms that early childhood education and care services should have strict controls in place to safely store and use images and video recordings of children, and that only service-owned devices can be used to take images and video of children. Adults can model digital consent with children by asking permission to take their photograph and only posting pictures and videos of them on secure digital documentation platforms. Services should have family consent for any images and videos taken of young children and used in digital documentation platforms.

'The concept of children's digital rights in early childhood education and care settings is becoming more accepted.'

Even in situations where controls and child and family consent are in place, digital documentation can be inadvertently shared by educators or families, and children may appear in posts or data-sharing among adults they do not know. Children's right to privacy and informed consent around the use of their data may also be impacted by educators and services using AI applications for programming and planning, especially when observations or images of children are uploaded to AI to generate suggested learning experiences (Berson et al., 2025). Other issues can arise when services do not confirm with families or children how their digital data will be stored, for how long, and how it will be destroyed once children leave the service. This can include personal and sensitive information such as their name, address, age, social security details, health information, immunisation status, their family's employment details, and the number of adults and/or other children living in the child's home. More than one set of collected personal data can compromise children's and families' online identity through data triangulation. It is essential for services to have comprehensive policies in place regarding the management, use and retention of children's and families' personal data, images and videos.

3.3 Online safety

In previous generations, online safety was mostly considered necessary for older primary and secondary school-age children. However, many young children now regularly access the internet using touchscreen technologies, internet-connected devices such as watches or voice assistants, and by playing with internet-connected toys and robots (Kidron & Rudkin, 2023). Using touchscreen technologies, children watch online content, interact with apps or go directly online for gaming experiences. When playing with internet-connected devices and toys, children often enjoy integrating popular-culture characters from digital media and games into their play. Internet devices and toys can record children's voices and actions. AI embedded in internet devices and toys can create responses to children's play that generates curated user data and promotes continued interactions with children. In addition, biometrics can capture young children's faces, eyes or fingerprints and be used to authenticate their access to the internet. The many

interactions young children have with the internet mean early childhood educators must consider how to promote online safety for young children.

There are four main areas of online safety for educators to consider. These are **content**, **conduct**, **contract** and **contact** (Livingstone & Stoilova, 2021).

Content refers to the material children access and view online. Young children can be exposed to inappropriate content via the internet, such as violent, illegal or sexualised materials; advertising and games that promote gambling; and advertising for unhealthy food products (Stoilova et al., 2021). Research shows that high levels of product advertising via digital media increases young children's requests for unhealthy food and drink (Barker et al., 2022). Consumption of these products is associated with higher levels of overweight and obesity in early childhood. Online material accessed by young children can also reinforce gender, religious or cultural biases that do not help children become respectful participants in their communities.

Educators can reduce content risks by pre-viewing content they intend to use with children, using filters and setting restrictions on devices and networks used in early childhood settings. Educators should always co-view content with children. Educators can also seek guidance about appropriate digital content for young children from trusted providers or developers of digital games, apps and online content. Appropriate online content for young children fosters citizenship values of respect, tolerance and inclusion, promotes pro-social behaviours and provides opportunities for learning. Trusted providers and developers of appropriate and safe online material for young children include recognised government agencies and not-for-profit groups focused on the best interests of children.

Conduct is about how children interact, engage and behave with other people and digital activities online. Young children have slightly different conduct risks online to older children. Older children may be more likely to experience social exclusion, cyberbullying, image-based abuse, sexual extortion,

exposure to child sexual abuse material and other illegal and restricted content due to being online with more independence than young children (eSafety Commissioner, 2025). For young children, conduct risks can occur when they are using digital technologies that appear suitable for their age group, but are based on manipulative design features. Manipulative design features benefit the designer and not the child. They can include pop-ups, time pressures to complete in-game activities, character inducements to stay connected, and prizes for continued activity (Radesky et al., 2022). Manipulative design can also involve children in infinite scrolling, exposure to algorithms and recommender systems, and intermittent reward schedules that keep them using technologies. Pop-ups are another important conduct risk for young children because they tend to click on them thinking this will close the pop-up and enable them to continue with their activity. Young children also click on pop-ups when they are not yet able to read the text and can inadvertently select options that open the pop-up when trying to make it disappear. These clicking actions engage the pop-up so that children may accidentally download viruses to the device, proceed to make digital in-game purchases without adult approval, or are re-directed to another online site where they may be exposed to inappropriate content.

Internet-connected toys and household objects used by children can retain their online connection even when children are not playing with them and continue to record data, such as conversations, without children's knowledge. Some apps used by children and educators in early childhood settings—even those that appear to operate offline—record large amounts of data about children without user knowledge. Data about the amount of time children spend using an app and their engagement levels can be recorded and sent over the internet to the

app developer to inform future iterations of the app, or to directly target children for continued play, advertising or promotional materials. Wearable technology such as wristband activity and location trackers can also record data about young children's activities and whereabouts. AI chatbots embedded in children's toys may also pose conduct risks for children by generating, recording and reusing data about their language patterns, developmental progress and play preferences. Data recorded via internet-connected toys, household objects, AI, apps and wearables is called data harvesting and may be used by product companies to initiate further contact with children to promote additional purchase of products.

Not all digital technologies, apps, toys, AI and digital platforms developed for use with, by and for young children have been designed with in-built conduct safety protections. Often online safety concerns associated with these products are not identified until after market release. Being aware of conduct risks in terms of accidental downloads, in-app purchasing, site re-direction and data harvesting can help educators take a proactive approach to young children's online safety. For example, if using activity trackers with children to promote learning about health and wellbeing, educators should first check permission options for data harvesting and ensure these are turned off. Educators can also teach young children to respond to unwanted pop-ups by clicking the corner 'x' to close, or to seek adult help if they encounter pop-ups. During online game or app play, educators can engage young children in conversations about respectful interactions with people, such as avoiding name-calling and teasing, and turn-taking among peers. Educators should engage in active supervision of children when using AI-enabled products in early learning settings.

'Educators should engage in active supervision of children when using AI-enabled products in early learning settings.'

Contact involves children engaging with people online. Children may contact people they know online, such as friends, family or kinship members using video-chat, messaging, digital documentation platforms or social media. But children may also encounter people they do not know, for example when playing in virtual worlds or multi-player, internet-based games. AI can be used by people children do not know to analyse their in-game activity and identify them as targets for grooming. AI can also be used by people unknown to children to interact with them about their interests, creating false identities and relationships as a means of exploitation. Children may reveal personal information such as their name, age and address to people or AI they encounter online whose intent is to trick or manipulate them. Children can also be exposed by people or AI to inappropriate content or conversations online.

Early childhood educators are committed to teaching young children about trusted adults in their lives and the importance of asking trusted adults for help. Educators can extend this teaching so that young children understand a trusted adult can help them use the internet safely. It is important that adults remain open to hearing from children about their online experiences so that children learn from a young age that adults can help them.

Active adult supervision of young children online is critical (Pons-Salvador et al., 2022). Active supervision involves applying filters and controls to devices and networks, checking privacy and location settings, being physically present with children when using the internet, and having discussions with children about their internet use.

Contract risks occur when young children are exposed to terms and conditions that they may inadvertently accept. This is most likely to happen when children are using online games or apps. Some terms and conditions children accept might agree to the collection and on-selling of their personal data. Children might also make in-app purchases, buy game tokens or sign up for long-term use of a game or app.

Adults can minimise contract risks by ensuring payment options are turned off devices and that in-app purchases are disabled on games that children use. Active adult supervision of young children online provides appropriate opportunities for modelling privacy and data protection with children against contract risks, such as selecting 'required only' user permissions on websites and apps, using passwords and ensuring two-factor authentication.

3.4 Online-safety education

Children can learn how to participate safely and productively in digital contexts through online-safety education (Ladd & Traver, 2023). Research shows that children are accessing the internet more often than in the past (Konca, 2022). The increase in young children's internet use has led to the inclusion of online-safety education in the EYLF V2.0 (AGDE, 2022) and international recommendations for online-safety education in early childhood education and care (e.g. United Kingdom Council for Internet Safety, 2019). Online-safety education in the early years can support children to explore how people safely use technologies as per the Australian Curriculum (ACARA, n.d.).

There are many examples of well-designed online-safety education resources for primary and secondary school-age children, for example www.thinkuknow.org.au, www.esafety.gov.au and www.esmart.org.au. Because older children are more likely than younger children to understand the internet as a network of technologies, these approaches focus on teaching children how to engage in safe behaviours online and where to find trusted help and support.

Online-safety education for young children cannot simply be adapted from programs developed for older children, because young children do not understand the internet in the same way as older children and adults (Danovitch, 2019). Young children identify the internet as the device they are using, or as the social practices they observe people engaging in online. For example, preschool-aged children describe the internet as being 'in my iPad', or as being available for 'doing emails' and 'playing games' (Edwards et al., 2018).

For younger children, online-safety education can begin with early understandings about digital technologies as networked. Because children learn through play and social interactions, educators can design play experiences that help young children understand that digital technologies are connected. For example, educators can create internet play walls with images of devices connected by strings that children can use to send messages and share emoticons. Pretend internet play can also be supported by connecting non-working devices in office or home play stations with string. Pretend play with phones or devices made from cardboard or wood facilitates opportunities for children and educators to discuss how data is shared via wireless networks. Research suggests that opportunities for play-based learning about the internet facilitates children's online-safety education, such as ensuring that children seek adult support when using the internet, or that children always co-view digital content with a trusted adult (Edwards et al., 2025).

Using the internet with young children in early childhood education and care settings also creates real-life online-safety learning opportunities. For example, educators can model using passwords and two-factor authentication, avoiding pop-ups and not being distracted by suggested content. Educators and children can also participate in shared discussions about the quality of content and information they access on the internet and the extent to which it meets their purposes.



Citizenship

Principle: Young children's citizenship is upheld and fostered in digital contexts

Practice advice:

01

Participate in professional learning opportunities to build understanding about young children's digital rights and how these relate to young children's socioeconomic, geographic, gender and culturally based experiences in digital contexts.

02

Commit to working ethically with children and families when using digital documentation and AI, including obtaining consent to use images and video of children via digital documentation platforms and educational AI applications.

03

Develop policies and guidelines about the collection, use, retention and deletion of digital data held about young children and communicate these to families.

04

Ensure active adult supervision of young children's online activities, including the use of filters and restrictions on devices and networks, checking privacy and location settings, and always co-use devices with children in the education setting.

05

Facilitate and maintain conversations with young children about their online experiences, both positive and negative, to ensure they are supported by trusted adults in their online engagements.

06

Help children develop an understanding of the internet as a network that people and AI use to generate, store, retrieve and share information.

07

Model internet use with children for learning purposes and provide opportunities for assessing the quality and relevance of information generated by people and AI.

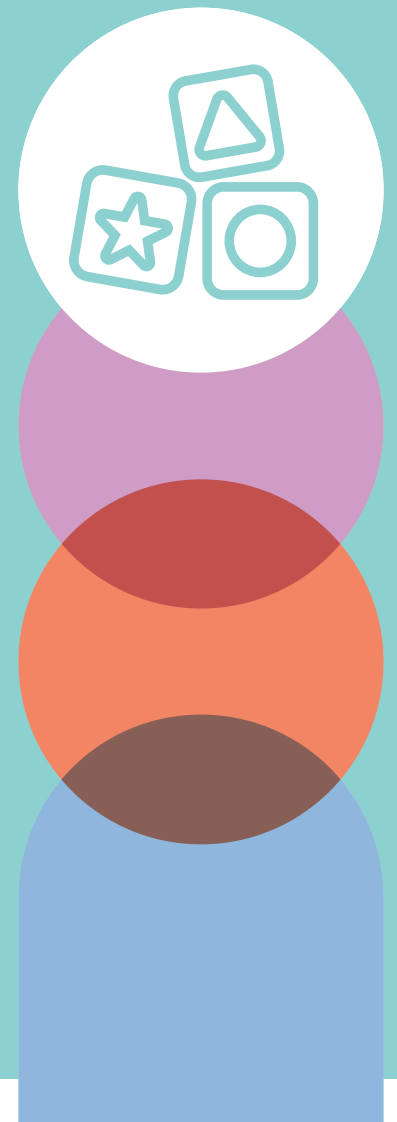
08

Direct families towards government and trusted not-for-profit organisations for advice on selecting digital media, content, apps, games and AI that are appropriate for use by young children.

PART 4 Play and pedagogy

Young children have opportunities for play and pedagogy in digital contexts. Play and pedagogy involves children and educators using a range of digital devices for exploration, meaning-making, collaboration and problem-solving. Educators engage in active decision-making about the use and non-use of digital technologies for learning.

The guiding principle for Play and pedagogy is: Play and pedagogy promotes young children's exploration, social interaction, collaboration and learning in digital contexts.



4.1 Digital play

Play is an established part of early childhood education. Educators understand that children's play provides opportunities for children to explore ideas, experiment with materials and engage with other people for learning (Arnott, 2023). Both indoor and outdoor play are important for young children's learning and development. Through play, children build language, engage in social interactions, develop concepts about the world, and experience physical and cognitive challenges. Educators engage with children during play using strategies such as modelling, questioning, demonstrating and discussing to build their knowledge, skills and capabilities (Crieshaber et al., 2021).

Digital play involves children in many combinations of activities using non-digital and digital resources, either by themselves or in collaboration with others. For example, children may create and share digital content using apps, make their own videos or explore the physical world using digital microscopes. Digital play can also foster opportunities for physical activity, such as children using digital timekeepers in running races or obstacle courses, accessing apps for physically active games and downloading music for singing and dancing. Digital play also includes children's interactions with AI embedded in toys, games, apps or personalised learning systems.

Sometimes young children are described as 'digital natives' with a natural ability to use digital technologies. However, research suggests digital learning is a social process (Mertala et al., 2024). Children learn to use digital technologies in the same way they learn in other areas of the curriculum, such as language and literacy, science and mathematics. Exploratory play, observations of adults using digital technologies, and interactions with peers and educators help build children's knowledge and expertise in using digital technologies (Undheim, 2022).

Exploratory play is how children learn the properties of materials. When using traditional materials,

this is how children become familiar with the texture, function, surface and colour of resources such as paint, paper, clay, sand, markers and glue. In digital contexts, exploratory play involves children becoming familiar with how the different functions of digital technologies operate (Leung et al., 2020). For example, video and audio recording; taking digital photographs; storing, retrieving and sending data; 2D and 3D printing; interacting with social robots; and co-creating prompts for AI with educators. When children repeatedly press buttons, engage with voice-activated devices or repeat their interactions with robots, they are engaging in exploration that helps them learn how digital technologies operate. For example, it is difficult for a child to create a digital film when they have not yet learned how to start and stop the 'record' button. Shared attention, modelling and scaffolding between children and educators when using digital technologies is important in this learning (Chu et al., 2024).

In early childhood settings, children also learn to use digital technologies by playing with objects that represent digital technologies, such as blocks used as pretend phones or cardboard boxes made into touchscreen tablets (Vogt & Hollenstein, 2021). Educators can use multiple materials for this type of play. Some may be purpose-designed pretend digital technologies. Often children will use simpler materials, creating their own devices from blocks, paper, cardboard, or even using their hands as pretend devices. Educators may observe children using their pretend devices to send a text message to a friend, search for information online or watch digital content (Delfin & Wang, 2023). Educators can join in this play by responding to children's messages, asking about their information searches or co-viewing children's pretend content. Pretend digital play builds opportunities for children and educators to understand the social uses of digital technologies (Bird, 2020) and can provide an important context for discussing and modelling online safety (Edwards et al., 2025).

4.2 Digital technologies in play and learning

Young children engage with a range of technologies, such as touchscreens, voice activation technologies and digital toys. These technologies are accessed by children through hands-on interactions, visual icons and audio input and output (Wang et al., 2022; Arnott & Yelland, 2021). Children's interactions with objects and people in their world influence how their brains develop and what they learn. It is not yet clear from research evidence if high levels of screen use influences children's brain development (Hutton et al., 2020), thinking (Mallawaarachchi et al., 2022; Lakicevic et al., 2025; Kracht et al., 2023) and language learning (Mallawaarachchi et al., 2022; Gath et al., 2025). Some adults are concerned that exposure to electromagnetic fields when using digital technologies can impact children's brain development. However, the available evidence does not support this concern (Bodewein, 2022). Meanwhile, the current advice suggests that screen use by children aged two years and under should be minimal. For children aged two to five years, the *Australian 24-Hour Movement Guidelines for the Early Years* suggests a limit of one hour of sedentary screen time per day (Australian Government Department of Health, Disability and Ageing, 2017). Children require a balance of activities throughout the day, including opportunities for fine motor and gross motor physical activity (Whiting et al., 2021) and social interactions with peers, older children and adults (Undheim, 2022). Educators can make informed judgements about how, when and why young children use digital technologies for play and learning.

Preschool-aged children in early childhood education and care settings can benefit from touchscreen technologies that involve careful use of apps. Apps have various levels of quality and educational design. Educators can consider how different apps meet the play interests of children in their classrooms or create new opportunities for children to mix and match multiple modes of communication, such as video, audio, images and text. This is important for sustaining the quality of children's in-app digital play (Oakley et al., 2018). Quality apps and digital content can support learning through well-structured narratives and

'Educators can make informed judgements about how, when and why young children use digital technologies for play and learning.'

activities that promote problem-solving and reasoning (Meyer et al., 2021). Appropriate apps and digital content for children should be pro-social, non-violent, promote gender and cultural diversity, and have very little advertising (Colliver et al., 2020). Content that is too fast-paced for young children can negatively influence executive function (Swider-Cios et al., 2023).

Young children's learning using digital technologies can be maximised by adults through joint engagement (Archer et al., 2021). Joint engagement involves children, peers and adults participating in digital activities together, for example, playing with internet-connected toys or robots, interacting with an app, co-viewing media or playing games. When children participate in joint engagement they can ask questions, put forward ideas and receive feedback from adults and other children in relation to a shared activity. This helps build opportunities for language development, fosters collaborative learning and helps children develop digital skills (Scott et al., 2023). Joint engagement reminds educators that young children do not just use technologies to consume digital content or play games. Young children also use digital technologies in collaboration with adults at home, in the community, and in their services to participate in daily activities such as ordering food or shopping online, contacting family and friends, or signing in and out of their educational setting. Through joint engagement, adults can help children transition between using and not using technologies, for example when enjoying digital content, noting that an episode is nearly finished, and that the next activity will involve preparing a meal or playing outside.

Beyond touchscreens, voice-activated devices and digital toys, the range of digital technologies used by young children is extensive. Research shows that young children use desktop and laptop computers, game consoles, augmented and virtual reality, robots, 3D printers, coding toys, wearables and AI (Kewalramani et al., 2021; Scott et al., 2023). Children themselves describe digital technology use in active terms, using words such as 'learn', 'make', 'build', 'paint', 'write', 'watch' and 'feel' to explain what they do with them (Mertala, 2016). This active positioning connects with the idea that digital play in early childhood provides children with opportunities to explore and experiment with digital technologies. For example, children and educators might take apart and reassemble discarded technologies to see how they operate. Children can enjoy recreating their own technologies using combinations of traditional materials and parts from non-working technologies (Li et al., 2024). Programmable robots are often used by children and educators as hands-on digital technology experiences. Children can touch and observe this technology responding to the coding they create. When the robot responds to the coding in an unexpected way, an educator and child can problem-solve together—why does the robot appear to be turning the wrong way? This promotes computational thinking, which involves identifying problems, and proposing and testing solutions to those problems (Su et al., 2023).

Augmented reality introduces digital content or images into the classroom or playground environment using a handheld touchscreen or wall screen. In early childhood education and care settings, augmented reality can provide engaging learning experiences for children beyond the classroom, such as interacting with digital dinosaurs, experiencing planets or geographical locations from around the world. Educators can combine hands-on materials with augmented reality for rich play experiences with children (Berson & Berson, 2023).

Digital media enjoyed by young children, including popular culture through television programs or on-demand apps, movies, games or online content, can inform complex play narratives enacted by children (Pettersson & Ehret, 2024). These narratives may involve children in high-level physical activity, such as running, climbing, chasing, jumping and leaping when playing superheroes. Digital media also provides opportunities for children to create their own play resources, such as 2D or 3D print-outs of popular-culture characters, drawing, photographing or painting background landscapes, designing and fashioning costumes, or digitally recording themselves in-character. These opportunities help build children's media literacy through content creation, meaning making, and sharing and communicating their ideas with other people (Pires Pereira et al., 2023).

4.3 Digital pedagogy

A hallmark of being an early childhood educator is the capacity to make informed decisions that are in the best interests of young children. Early childhood educators are equipped with professional knowledge about how young children play, learn and develop. Educators understand the importance of social engagement and building strong relationships with children. They can apply this knowledge and understanding to provide play opportunities and experiences that support children in the achievement of Learning Outcomes aligned with the EYLF 2.0, including having a strong sense of identity; being connected with and contributing to their world; having a strong sense of wellbeing; being confident and involved learners; and effective communicators (AGDE, 2022). When educators support children in these Learning Outcomes, they make pedagogical decisions about how and why children engage in different play experiences.

'Educators can combine hands-on materials with augmented reality for rich play experiences with young children.'

Digital pedagogy involves active decision-making by educators about using digital technologies with, by and for young children. For example, it is important that young children have opportunities to experience outdoor play without digital technologies. It is also appropriate that children engage in experiences such as painting, drawing, storytelling, book-reading, singing, dancing or sharing cultural activities without using digital technologies. Time spent without technologies is valuable for children and their adults. At other times, educators might decide to use digital technologies with children because they can help children to develop and communicate an idea, access information required to progress play, develop an inquiry-based project or explore how AI works.

Decision-making about digital technology use in early childhood settings promotes inclusion for all children (Rizk & Hillier, 2022). For example, children with social or language delay can benefit from engaging with social robots (Syriopoulou-Delli & Gkiolnta, 2020), while translation apps in digital books can support children from culturally and linguistically diverse backgrounds to participate in shared play activities and build peer relationships (Nilsen, 2024). Culturally responsive digital technology use can maximise digital learning opportunities for Aboriginal and Torres Strait Islander children, families and communities (Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts, 2024).



Play and pedagogy

Principle: Play and pedagogy promotes young children's exploration, social interaction, collaboration and learning in digital contexts

Practice advice:

01

Provide opportunities for children to explore and experiment with a diverse range of digital technologies alongside adult modelling, questioning, demonstrating and discussion of digital technology use.

02

Promote play involving children in digital technology use with combinations of non-digital and digital materials to build knowledge about the safe use of technologies for communicating and collaborating with other people, and generating, seeking, evaluating and sharing information.

03

Invite and listen to young children's perspectives about the role and use of digital technologies and media in their own lives, play and learning.

04

Recognise children's digital and media interests as a provocation for intentional learning experiences and an opportunity for connection between peers.

05

Engage in deliberate decision-making regarding digital technology use with, by and for young children that recognises opportunities for inclusion and promotes equity and access to digital learning.

Conclusion

Australian children today are growing up in digital contexts. This Statement provides an overview of contemporary research and thinking about the role and optimal use of digital technologies with, by and for young children in early childhood education and care settings. Four principles, and practice advice for each principle, are identified.

It is intended that this Statement will be regularly reviewed and refined as educators, researchers, policymakers and affiliated early childhood professionals continue to build the evidence base required to further understand what is in the best interests of young children growing up in digital contexts.



Glossary of terms

App: An abbreviation of the term 'application', used here to refer to small programs that can be downloaded or installed on devices such as mobile phones and tablet computers.

Artificial Intelligence (AI): AI is embedded in the digital networks that children and adults use every day. AI is a type of technology that generates predictive outputs such as content, forecasts, recommendations or decisions for a given set of human-defined objectives or parameters without explicit programming. AI can help people complete tasks such as decision-making, problem-solving, reasoning or creating new materials. Some forms of AI can help people with a single task for which it has been coded, such as facial recognition. Single-task AI is sometimes called 'weak' or 'narrow' AI. Other types of AI can learn from large data sets, answer questions or create new content for people (e.g. chatbots). This type of AI is often called 'strong' or 'general' AI. Generative AI is a type of AI model which uses machine learning to produce novel content such as text, images, audio, video and code in response to prompts. Generative AI can pose safety risks to young children, such as producing content which is inappropriate for young children or being misused by abusers as a tool for grooming.

Coding: The process of creating and inputting messages that can be understood by others, or by a digital device such as a computer, robotic toy or app.

Co-playing: When two or more children and/or an adult and child(ren) engage in play together, communicating about their actions and/or the content of their shared activity

Co-viewing: Occurs as two or more people view the same content together, promoting opportunity for conversation and communication about the content they are sharing.

Digital data: Information that is transmitted digitally, including (but not limited to) text, audio, images and video.

Digital documentation: Recording and analysing children's engagement and learning using digital tools and applications. This can include photos, text and video and may be communicated via an online platform.

Digital technology: First developed in the 1960s with the advent of microprocessors or small 'chips' that convert information into numbers, digital technology enables large amounts of data to be stored and shared so that it can be accessed, created and used by people anywhere, at any time.

Early childhood education and care setting: Includes long day care, kindergarten/preschool, pre-prep, occasional care, family day care, first years of school and/or outside school hours care.

Educators: Early childhood teachers, educators and support staff who work directly with children to promote learning, development and wellbeing in early childhood settings.

Executive functioning: A collection of processes associated with children's guiding thoughts and behaviours that help them plan and execute a goal. Some examples are working memory, focus, cognitive flexibility and emotional regulation including inhibition and control.

Extended reality technology: Technologies which enable users to experience and interact with digital content in 3D. Extended reality technology can include virtual reality, augmented reality and mixed reality. Virtual reality uses computer hardware and software to create an artificial environment that looks and sounds as if the user is really present in that environment. Augmented reality overlays a user's view of the physical world with digitally generated real-time sound and vision. Mixed reality combines elements of augmented reality and virtual reality by blending digital content into the physical world, allowing users to interact with virtual elements as an extension of reality.

Haptics: Technologies that use touch sensation or movement to control interactions with digital devices.

Interactive whiteboard: A digital screen that projects content for groups of children to co-view or engage. Interactive whiteboards incorporate touch-sensitive or responsive controls so the user may engage via the screen rather than by using a mouse or keyboard.

Internet of Things: 'Smart tools' and objects that are connected to the internet to transmit or receive information. These include items such as interactive air-conditioners or lights that can be controlled remotely.

Internet of Toys: Toys that are connected to the internet and can transmit or receive data via the internet.

Joint engagement: When people (children and adults) engage in an activity together, for example, two children working together to code a robotic toy.

Online-safety education: Education that helps young children understand the internet, ensures children are always supervised online and know to seek support from a trusted adult.

Media: Digital media refers to content accessed through digital devices, including text, audio, images, animations, video and multimodal activities.

Pedagogy: Educators' decision-making about children's learning experiences and opportunities, made in the best interests of the child.

Screen time: A general term that includes any time a child engages with an electronic screen, including (but not limited to) watching television, engaging with games or creating digital books. As there is good evidence that content (such as pro-social) and context (such as co-viewing) factors are very important influences on a child's health and wellbeing, 'screen use' is a helpful term.

Screen use: A general term that includes all aspects of a child's engagement with an electronic screen, including the duration, device type, purpose, content and context.

Sedentary behaviour: Sitting or lying down; awake but relatively inactive or stationary.

Self-regulation: The capacity for children (and adults) to regulate their behaviour in response to their emotions and thinking.

Social robot: A type of robot that interacts or communicates with humans. Social robots can be physical robots or can be engaged through screens or audio.

Streamed media: Streamed media refers to digital, audio or video content that is accessed via the internet or apps in real-time, allowing young children to watch or listen continuously.

Technology: The development of new objects or tools that help people in their lives. Three broad types of technology are mechanical technology (e.g. wheels, blocks, levers, gears); analogue technology (e.g. film-based photography, drawing, painting); and digital technology (e.g. mobile phones, computers and AI).

Video-chat: Online video screen to have a social engagement with a family member or friend.

Wearable technologies (wearables): Digital technologies that can be worn, e.g. watches, fitness tracking devices, jewellery and clothes made with electronic textiles.

Young children: Children aged from birth to eight years.

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