Better Internet for Kids

Reaching and engaging with very young children

Online safety and digital literacy

Good practice guide

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Executive summary

In today's digital world, **children are introduced to digital technology from an early age**, often before they can read or write. Children create, play and interact online from an ever-younger age, using digital technologies for education, entertainment, social contact and participation in society. In doing so, they often encounter digital content and services that were not designed with children in mind.[1] Still, whether through **touchscreen devices**, **educational apps**, **voice-activated assistants**, or **online videos**, digital tools shape how young children **learn**, **communicate**, and **interact with the world**.

While digital tools offer opportunities for **learning**, **creativity**, and **communication**, they also present **new challenges and risks**, particularly for children under the age of 8 who are still developing their cognitive, social, and emotional skills.[2] [3]

Children are increasingly accessing technology and online content at a younger age, with the average age of first internet use being 9.6 years old, according to Eurochild's 2023 annual report.[4] However, this age varies by country, with some children starting as young as 5 years and 10 months, such as in France.[5] Moreover, many children are exposed to the internet even earlier, with parents in Luxembourg reporting that 35 per cent of children have their first contact with internet-

[1] Chaudron, S., Di Gioia, R. and Gemo, M., Young Children (0-8) and Digital Technology - A qualitative study across Europe, EUR 29070 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-77767-7 (print),978-92-79-77766-0 (pdf), doi:10.2760/294383 (online),10.2760/245671 (print), JRC110359.

[2] Malik F, Marwaha R. Developmental Stages of Social Emotional Development in Children. [Updated 2022 Sep 18]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK534819/

[3] Committee on the Science of Children Birth to Age 8: Deepening and Broadening the Foundation for Success; Board on Children, Youth, and Families; Institute of Medicine; National Research Council; Allen LR, Kelly BB, editors. Transforming the Workforce for Children Birth Through Age 8: A Unifying Foundation. Washington (DC): National Academies Press (US); 2015 Jul 23. 4, Child Development and Early Learning. Available from: https://www.ncbi.nlm.nih.gov/books/NBK310550

[4] https://eurochild.org/news/digital-eurochilds-achievements-in-2023/.

[5] Association e-Enfance/3018, Survey Toluna - Harris Interactive of February 2023 with the support of Google. https://e-enfance.org/wp-content/uploads/2023/03/CP-etude-jeunes-enfants-et-internet.pdf.

connected devices before the age of 4 years old.[6] Additionally, the miniKim study shows that 4 per cent of children aged 2 to 5 in Germany have their own smartphone.[7] According to this study, almost 1 in 10 children (7 per cent) had their first experience with a smartphone at the age of 1, 37 per cent at the age of 2, and a quarter (26 per cent) at the age of 3. This trend poses significant risks, as most online platforms are not designed for children under 13, leaving them vulnerable to potential harms.

On the other hand, when introduced in a **balanced, age-appropriate, and guided way**, digital technology can offer **significant benefits** for young children's **learning, creativity, and development**. Educational apps, interactive games, and digital storytelling platforms can **enhance early literacy and numeracy skills**, making learning more engaging and inclusive through **visual, auditory, and hands-on interactions**. Digital tools also provide opportunities for **creative expression**, allowing children to **draw, compose music, build virtual worlds, or experiment with coding**. Additionally, technology enables **social connections**, helping children stay in touch with family members through video calls or participating in **collaborative activities with peers in safe, controlled environments**. When used **thoughtfully and in moderation**, digital technology can complement real-world experiences, supporting children's **problem-solving skills, cognitive development, and adaptability to an increasingly digital world**.[8] However, to maximise these benefits, it is essential not only for parents/caregivers and educators to provide **supervision, age-appropriate content, and guidance** to ensure that digital interactions remain **positive,**

[6] Bee Secure Radar 2024, Current trends in young people's use of Information and Communication technologies. https://www.bee-secure.lu/wp-content/uploads/2024/02/162_bee-secure-radar-2024-en-ua.pdf.

[7] Kieninger, J., Feierabend, S., Rathgeb, T., Kheredmand, H., & Glöckler, S. (2021). miniKIM-Studie 2020 – Kleinkinder und Medien: Basisuntersuchung zum Medienumgang 2- 5-Jähriger in Deutschland. Medienpädagogischer Forschungsverbund Südwest. https://www.mpfs.de/fileadmin/files/Studien/miniKIM/2020/lfk_miniKIM_2020_211020_WEB_barrierefrei.pdf.

[8] Livingstone, S., Stoilova, M., & Rahali, M. (2023). Realising children's rights in the digital age: The role of digital skills. KU Leuven: ySKILLS. https://doi.org/10.5281/zenodo.10201528.

educational, and developmentally enriching, but also for young children to develop early digital literacy and safety skills.[9,10,11]

Early digital literacy skills help children **navigate technology safely, critically, and purposefully** while preventing risks such as **overuse, exposure to harmful content or behaviour, and online manipulation**. Just as young children are taught **road safety before crossing the street**, they also need to learn **basic online safety rules** before they fully engage in digital spaces.

- Early childhood is a critical time for developing healthy digital habits.
- Young children require age-appropriate guidance to explore digital spaces safely.
- Parents and educators play a crucial role in balancing young children's opportunities and risks in the digital world.

Early digital literacy fosters **family co-usage, healthy screen habits, responsible online behaviour, and critical thinking**, empowering children to make **safe and informed choices** as they grow. Moreover, by introducing **age-appropriate digital skills early**, parents and educators lay the foundation for **lifelong learning, creativity, and responsible digital citizenship**,[12] ensuring that children can fully participate in the opportunities the digital world has to offer while staying protected from its risks. Ensuring that young children can **safely explore, understand, and navigate digital spaces** is a **shared responsibility** between parents, caregivers, educators, and policymakers.

By providing **best practices for engaging young children in digital learning**, this Good practice guide aims to empower **families, educators, and**

[9] Frizzo, G.B. (2024). What Are the Current Challenges of Digital Media Use by Children Under Five? In: Frizzo, G.B. (eds) Digital Media and Early Child Development. Springer, Cham. https://doi.org/10.1007/978-3-031-69224-6_1.

[10] Livingstone, S. M., & Blum-Ross, A. (2020). Parenting for a digital future: How hopes and fears about technology shape children's lives. Oxford University Press.

[11] Zimmer, F., Scheibe, K., Henkel, M. (2019). How Parents Guide the Digital Media Usage of Kindergarten Children in Early Childhood. In: Stephanidis, C. (eds) HCI International 2019 - Posters. HCII 2019. Communications in Computer and Information Science, vol 1034. Springer, Cham. https://doi.org/10.1007/978-3-030-23525-3_41.

[12] https://www.coe.int/en/web/education/digital-citizenship-education.

communities to ensure that **every child—regardless of background—has the skills and support needed to thrive in the digital age**.

This guide provides **practical strategies, approaches, and tools** to help early childhood professionals and families **engage with very young children** in developing **essential digital literacy and online safety competences**. Recognising that **young children learn differently from older age groups**, this guide highlights **developmentally appropriate methods** that focus on **play, storytelling, interactivity, and real-world connections** to make digital literacy **accessible, engaging, and meaningful**.

Structure

This guide is designed to support **parents, caregivers, and educators**, and is articulated around four parts:

Part I: Why developing early online safety and digital literacy matters?

offers an overview of:

- what young children do with digital technology and why it matters;
- how digital engagement links to early cognitive and emotional development;
- the risks and opportunities presented by digital experiences;
- the role of families, educators, and Safer Internet Centres in supporting young children's digital growth.

Part II: What online safety and digital literacy to develop among young children? discusses what:

- young children’s digital literacy and online competences should consist of.

Part III: Engaging with young children develops:

- approaches and strategies to engage on the subject with young children, focusing on age-appropriate teaching techniques, including storytelling, play-based learning, and interactive tools.

Part IV: Engaging with parents, caregivers and educators focuses on:

- practical strategies to involve parents and caregivers in the process of developing early digital literacy and online safety skills while considering cultural, socioeconomic, and developmental barriers to digital inclusion.

By providing a well-rounded perspective on young children's digital experiences, this guide aims to support those who shape their digital environments, ensuring that technology serves as a tool for positive growth rather than as a source of harm.

Part I: Why developing early online safety and digital literacy matters?

1. Understanding young children's online behaviours

1.1 What do young users do online, and how do they interact with digital technology?

Today, digital technology and platforms[13] have become an integral part of young children's daily lives. From an early age, toddlers and preschoolers are exposed to digital platforms and their services through smartphones, tablets, smart TVs, and other connected devices, most of the time using them for entertainment and play. It is now common to see young children watching cartoons on YouTube, playing interactive games on a tablet, or video-calling relatives with the help of their parents.

The descriptions that are reported in this section rely on the work done and published by the Joint Research Center of the European Commission on the subject,[14] in particular, the research on young children (0-8) and digital technology. This study shows that many children develop basic digital skills before they even learn to read, navigating touchscreens intuitively through trial and error. As digital technology becomes more embedded in family routines, its role in shaping childhood experiences continues to grow, raising both opportunities and concerns for parents and educators alike.

Children under the age of 8 primarily engage with digital technology within their home environment, where they usually can have access to a variety of digital devices. Across different households, smart TVs, tablets, smartphones, game consoles, laptops, and PCs are common, though the specific devices available and the extent of access depend on parental choices and household norms. Among

[13] Livingstone, S., Sefton-Green, J. (2025). The Platformization of the Family. In: Sefton-Green, J., Mannell, K., Erstad, O. (eds) The Platformization of the Family. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-031-74881-3_2.

[14] Chaudron, S., Di Gioia, R. and Gemo, M., Young Children (0-8) and Digital Technology - A qualitative study across Europe, EUR 29070 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-77767-7, doi:10.2760/294383.

these, tablets and smartphones are the most preferred devices for young children. Their portability and touchscreen functionality make them intuitive and easy to use, even for children who have not yet developed reading or writing skills. Unlike other devices, which require a pad, a remote controller, a keyboard, or a mouse, tablets and smartphones allow for direct interaction through touch, enabling children to explore, learn, and play with minimal assistance.

Children tend to mirror the digital habits of their parents and siblings. If parents frequently use smartphones, tablets, or computers, children are more likely to imitate these behaviours and develop similar digital routines[15] [16]. Many children also learn how to navigate digital devices through observation and trial and error on devices that they do not own and that are not meant for them in the first place. This method of self-learning allows them to pick up basic digital skills quickly, but it also exposes them to potential risks, such as accessing unsuitable content or encountering online advertisements.

Interestingly, the presence of digital technology in a child's life does not seem to be significantly influenced by socioeconomic status.[17] While families with higher income levels may have access to newer or higher-quality devices, the number of digital tools available in a home does not differ greatly between economic groups. Instead, the ways in which children engage with these devices are shaped more by parental attitudes and mediation strategies. In some homes, digital devices are used as shared family resources, while in others, children may have personal devices dedicated to their use. Regardless of ownership, children's interaction with technology is guided by their curiosity, the behaviour they observe in older family members, and the boundaries set by their caregivers.

[15] Lauricella AR, Wartella E, Rideout VJ. *Young children's screen time: the complex role of parent and child factors.* J Appl Dev Psychol. (2015) 36:11–7. 10.1016/j.appdev.2014.12.001

[16] Terras MM, Ramsay J. *Family digital literacy practices and children's mobile phone use.* Front Psychol. (2016) 7:1957. 10.3389/fpsyg.2016.01957

[17] Livingstone, S., Mascheroni, G., Dreier, M., Chaudron, S. & Lagae, K. (2015*) How parents of young children manage digital devices at home: the role of income, education and parental style*. http://eprints.lse.ac.uk/63378/.

1.2 How do young children interact with digital technology?

Young children interact with digital technology in diverse ways, with entertainment, learning, communication, and creativity emerging as key areas of engagement. Whether watching videos, playing games, or exploring interactive storytelling, digital devices provide children with easily accessible sources of fun and relaxation. At the same time, digital tools play an increasingly important role in education, with learning apps and online school resources supporting early literacy and numeracy. Beyond passive consumption, technology also enables children to connect with family members through messaging apps and video calls, while some begin experimenting with social networks under varying levels of parental supervision. Additionally, digital platforms offer creative opportunities, from drawing and photography to designing virtual worlds in games like *Minecraft*. While digital engagement presents both opportunities and challenges, understanding how children use technology can help parents and educators guide them towards a balanced and enriching digital experience.

1.2.1 Entertainment

The most common way young children interact with digital technology is for entertainment, particularly watching videos and playing games. Video consumption is widespread, with platforms such as YouTube being particularly popular. Many children engage with videos related to their offline interests, such as cartoons, music, documentaries (wildlife especially), and educational content. The autoplay features of streaming services often lead children to extended viewing sessions, making it essential for parents to monitor screen time and content. Some monitoring tools[18] can help parents manage their kids' screen time but cannot be used solely as a mediation strategy.

Video games are another favoured activity, with young children playing simple mobile or tablet games that do not require complex controls. Popular choices

[18] Monitoring tools such as the '*Limit screen time on YouTube Kids*' https://support.google.com/youtubekids/answer/6130558?hl=en.

include puzzle games, interactive storytelling apps, and virtual pet simulations. For families that own gaming consoles, some children are introduced to multiplayer or adventure games, often playing alongside their older siblings or parents. The level of access to games depends on parental mediation, with some families allowing unrestricted gaming, while others limit playtime and types of games accessed.

1.2.2 Learning

While entertainment dominates children's digital activities, learning through digital technology is also significant, and had a major uptake among young children during the COVID-19 crisis.[19] Some children use educational apps designed to teach early literacy, numeracy, or problem-solving skills. These apps, often gamified, help children learn through play, making educational activities more engaging. In some cases, schools introduce digital learning tools, encouraging children to use tablets or computers for homework assignments. Parents who view technology positively are more likely to support this type of digital engagement, providing additional learning resources and supervising their child's use of educational apps. Importantly, this use is more encouraged by parents if it is explicitly requested by schools. Opportunities for learning are more concrete to parents when digital technology is integrated into formal education.

However, the availability of high-quality educational content varies across countries. In regions where digital education is well-integrated into schools, children are more likely to develop digital literacy at an early age. Conversely, in homes where digital technology is primarily associated with entertainment, children may have limited exposure to its learning potential. Parents play a crucial role in bridging this gap, ensuring that their children use technology for both fun and education.

[19] Cachia R., Velicu A., Chaudron S., Di Gioia R. & Vuorikari R. *Remote schooling during COVID-19 spring 2020 lockdown, a closer look at European families*, Publications Office of the European Union, Luxembourg, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-42550-2, doi:10.2760/613798, JRC125787.

1.2.3 Communication

Although very young children are not typically active on social media, digital technology does facilitate communication within families. Some children use messaging apps such as Viber, WhatsApp, or FaceTime to stay in touch with relatives, particularly those who live far away. In many cases, parents set up family group chats where children can participate in conversations under supervision.

A small percentage of children, around age 6, are already engaging with social networks. Some do so under parental supervision, integrated into family accounts, while others adopt social networking platforms to respond to peer pressure and engage with digital platforms beyond their age group. Parental mediation is essential in these situations to ensure that children's interactions remain safe and appropriate for their developmental stage.

1.2.4 Creativity

Some children use digital tools for creative expression, such as drawing on touchscreen devices, taking photos, or making short videos. Creative engagement often starts with parental encouragement, as parents introduce children to apps that allow them to paint, design, or edit pictures or videos. However, as children grow older, they may lose interest in these creative activities unless they receive continued support or have a strong personal interest in this form of expression and artistic creation.

Certain video games, such as *Minecraft*, allow children to build and create in a virtual world, fostering problem-solving and imagination. These experiences can be highly beneficial in developing cognitive skills, but they also require guidance to ensure that children use creative tools in a meaningful way. Encouraging children to share their creations with family members or incorporate digital art into their daily play can help sustain their interest in digital creativity.

1.3 Development stages in young children and digital technology engagement

Children's engagement with digital technology is closely linked to their cognitive and emotional development, which progresses through distinct stages. The way young children interact with digital tools—whether for play, learning, or communication—depends largely on their cognitive abilities, motor skills, and social-emotional development. Below is an overview of Piaget's key developmental stages[20] and how they influence digital technology use.

Infancy (0–2 years): sensorimotor stage (Piaget's Theory)

At this stage, babies explore the world through their senses and actions. Their cognitive development is characterised by:

- reflexive interactions (touching, grasping, sucking);
- recognition of familiar faces and voices;
- beginning of cause-and-effect understanding (e.g., pressing a button to see a reaction).

Impact on digital engagement:

- Infants are drawn to bright colours, movement, and sounds on screens.
- They may enjoy interactive apps with simple touch-based responses (e.g., tapping a screen to make an object move).
- However, excessive screen exposure at this stage may hinder real-world sensory exploration and attachment to caregivers. The American Academy of Pediatrics[21] and other EU Associations of Pediatrics[22] recommend little to no screen time for children under 18 months, except for video calls.[23]

[20] Piaget, J. (1958). Les étapes du développement mental. *Bulletin de psychologie*, 11(148), 678-685. Piaget, J. (1998). De la pédagogie. Odile Jacob.

[21] COUNCIL ON COMMUNICATIONS AND MEDIA, Victor C. Strasburger, Marjorie J. Hogan, Deborah Ann Mulligan, Nusheen Ameenuddin, Dimitri A. Christakis, Corinn Cross, Daniel B. Fagbuyi, David L. Hill, Alanna Estin Levine, Claire McCarthy, Megan A. Moreno, Wendy Sue Lewis Swanson; Children, Adolescents, and the Media. Pediatrics November 2013; 132 (5): 958–961. 10.1542/peds.2013-2656

[22] Bozzola, E., Spina, G., Ruggiero, M. et al. Media devices in pre-school children: the recommendations of the Italian pediatric society. Ital J Pediatr 44, 69 (2018). https://doi.org/10.1186/s13052-018-0508-7

[23] Take it SLOW, the Power of Zero. https://powerof0.org/first-device/

Toddlerhood (2–4 years): early preoperational stage

Toddlers begin developing symbolic thinking, memory, and basic problem-solving skills. They are highly curious and learn through trial and error. Key developmental characteristics include:

- limited attention span and difficulty with abstract thinking;
- growing independence and desire for autonomy;
- imitation of adult behaviours (e.g., copying how parents use devices);
- basic language development and early social interaction skills.

Impact on digital engagement:

- Digital tools designed for toddlers, such as interactive storytelling apps, basic drawing games, and touch-responsive educational content, become more engaging.
- Simple cause-and-effect games help develop cognitive flexibility.
- Many toddlers enjoy watching familiar videos repeatedly, reinforcing learning through repetition.
- However, unsupervised use can lead to passive consumption rather than active engagement, and toddlers have little understanding of online risks.

Preschool (4–6 years): late preoperational stage

At this stage, children's cognitive abilities expand, allowing them to develop stronger memory, problem-solving skills, and imaginative play. Key characteristics include:

- increased use of language and storytelling;
- ability to follow simple instructions and rules;
- beginning of logical reasoning, though still highly egocentric thinking;
- stronger fine motor skills, enabling better interaction with touchscreen devices.

Impact on digital engagement:

- Preschoolers engage more actively with educational apps that involve puzzles, counting, early literacy, and creative drawing.
- Games that involve basic decision-making (e.g., choosing outfits in virtual dress-up games, solving simple mazes) support cognitive growth.
- Many children develop preferences for digital entertainment, such as cartoons, music, and interactive storybooks.

- They may start using messaging apps (with parental help) for video calls with relatives.
- Without proper guidance, children at this stage may struggle to distinguish advertisements from content and may unknowingly make in-app purchases.

Early school age (6–8 years): concrete operational stage

Children at this stage develop improved logical thinking, problem-solving skills, and the ability to understand different perspectives. Cognitive characteristics include:

- greater ability to focus on structured tasks;
- early understanding of digital tools for learning and information-seeking;
- improved fine motor skills, allowing more precise interactions with keyboards and touchscreens;
- early critical thinking skills, though still limited in recognising misinformation.

Impact on digital engagement:

- Many children in this stage start using educational software for schoolwork, including typing, reading apps, and coding basics.
- Video gaming becomes a more social activity, as children can engage in multiplayer games with friends or family.
- They may experiment with content creation, such as making simple videos, voice recordings, or digital drawings.
- Some children begin exploring social networking in a limited way, particularly in family settings or through child-friendly platforms.
- Parents and teachers play a crucial role in guiding safe and responsible technology use, teaching children about online privacy, cyber safety, and digital etiquette.

1.4 Children's brains and digital technology use

As digital technology becomes an integral part of children's daily lives, researchers are increasingly examining its neurological and developmental effects. Brain imaging studies suggest that excessive screen time—especially at a young age—can influence brain structures responsible for self-control, emotional regulation,

decision-making, and social interactions.[24,25] While technology provides many opportunities for learning and creativity, heavy usage raises concerns about its potential long-term effects on cognitive and emotional development.[26] This is critical for young children, as these skills form the foundation of their ability to focus, plan, and engage in social interactions. Disruptions in normal brain development at this stage can make it harder for children to develop essential executive functions, potentially leading to attention issues, difficulties in self-discipline, and emotional outbursts.[27]

Digital interactions—especially those involving social media, video games, and fast-paced content—engage the brain's reward system by regulating the release of dopamine, a neurotransmitter associated with pleasure and motivation. Studies suggest that continuous exposure to highly stimulating digital content creates a feedback loop, reinforcing further use. This can lead to dysregulated dopamine release, making it harder for children to find enjoyment in offline activities, develop patience, and regulate emotions.[28]

1.5 Risks of the digital world for young children: the 5Cs model

As children explore the digital world, they encounter both opportunities and risks. While technology can support learning, creativity, and social interaction, it also exposes young users to potential dangers if they are not properly guided. Parents

[24] Achterberg M, Becht A, van der Cruijsen R, van de Groep IH, Spaans JP, Klapwijk E, Crone EA. Longitudinal associations between social media use, mental well-being and structural brain development across adolescence. Dev Cogn Neurosci. 2022 Apr;54:101088. doi: 10.1016/j.dcn.2022.101088. Epub 2022 Feb 19. PMID: 35220022; PMCID: PMC8881643.

[25] Maza MT, Fox KA, Kwon SJ, Flannery JE, Lindquist KA, Prinstein MJ, Telzer EH. Association of Habitual Checking Behaviors on Social Media With Longitudinal Functional Brain Development. JAMA Pediatr. 2023 Feb 1;177(2):160-167. doi: 10.1001/jamapediatrics.2022.4924. Erratum in: JAMA Pediatr. 2023 Apr 1;177(4):440. doi: 10.1001/jamapediatrics.2023.0001. PMID: 36595277; PMCID: PMC9857400.

[26] Arianna Sala, Lorenzo Porcaro, Emilia Gómez,(2024) Social Media Use and adolescents' mental health and well-being: An umbrella review, Computers in Human Behavior Reports, Volume 14,2024, 100404, ISSN 2451-9588, https://doi.org/10.1016/j.chbr.2024.100404.

[27] Chen YY, Yim H, Lee TH. Negative impact of daily screen use on inhibitory control network in preadolescence: A two-year follow-up study. Dev Cogn Neurosci. 2023 Apr;60:101218. doi: 10.1016/j.dcn.2023.101218. Epub 2023 Feb 16. PMID: 36821878; PMCID: PMC9933860.

[28] Maza et al. (2023) see footnote 21.

and educators play a crucial role in helping children recognise and respond to online risks in a way that is age-appropriate and empowering, rather than fear-based.

Experts categorise children's online risks into five key areas,[29] [30]known as the 5Cs of online risks: content, contact, conduct, commercial, and the additional cross-cutting risks, which include privacy, health and discrimination risks. The following figure explains each category.

Risks for Children in the Digital Environment				
Risk Categories	**Content Risks**	**Conduct Risks**	**Contact Risks**	**Consumer Risks**
Cross-cutting Risks*	Privacy Risks (Interpersonal, Institutional & Commercial)			
	Advanced Technology Risks (e.g. AI, IoT, Predictive Analytics, Biometrics)			
	Risks on Health & Wellbeing			
Risk Manifestations	Hateful Content	Hateful Behaviour	Hateful Encounters	Marketing Risks
	Harmful Content	Harmful Behaviour	Harmful Encounters	Commercial Profiling Risks
	Illegal Content	Illegal Behaviour	Illegal Encounters	Financial Risks
	Disinformation	User-generated Problematic Behaviour	Other Problematic Encounters	Security Risks

Figure 1: The OECD typology of Risks CO:RE classification of online risk to children (Source :OECD (2021). Children in the digital environment: Revised typology of risks., p7)

Content risks: exposure to harmful or inappropriate material

Content risks occur when children see something online that is not meant for them. This could include:

- violent or scary videos, images, or games;
- misinformation or false news;

[29] Livingstone, S. and Stoilova, M. (2021) The 4Cs: classifying online risk to children. CO:RE Short Report Series on Key Topics. Hamburg: Leibniz-Institut für Medienforschung | Hans-Bredow-Institut (HBI).

[30] OECD (2021). Children in the digital environment: Revised typology of risks. OECD Digital Economy Papers, No. 302. https://doi.org/10.1787/9b8f222e-en.

- advertisements disguised as kid-friendly content;
- content that promotes harmful behaviours (e.g., unhealthy body image, unsafe challenges).

Contact risks: interacting with strangers or unsafe individuals

Young children do not always understand that people online may not be who they claim to be. Contact risks involve:

- strangers messaging children through games, apps, or chat functions;
- online grooming – when adults try to befriend children for unsafe reasons;
- scammers pretending to be friends or family members.

Conduct risks: how children behave online

Young children may not yet understand the impact of their online actions, including:

- accidentally sharing private information (e.g., family photos, personal details);
- being unkind online – leaving mean comments or excluding others in digital games;
- posting something they later regret – once something is online, it can be difficult to remove.

Commercial risks: advertising and in-app purchases

Many websites, games, and apps are designed to make money. Young children often don't recognise ads or persuasive tactics, which can lead to:

- clicking on fake prize offers or pop-up ads;
- accidentally buying things in apps or games;
- being influenced by kid-targeted ads for toys, junk food, or unnecessary products.

Cross-cutting risks: health, privacy, and long-term impact

These risks affect multiple areas of a child's life, including:

- excessive screen time – can impact sleep, attention, and real-world social interactions;
- lack of privacy awareness – children may unknowingly share personal information online;
- behavioural changes – heavy social media or gaming use has been linked to increased anxiety, reduced patience, and difficulty focusing.

1.6 Empowering children to stay safe online

While the digital world offers great opportunities for young children, it also comes with real risks that parents and educators must actively address. The goal is not to instil fear, but to empower children with the skills and confidence they need to navigate technology safely.

By working together, parents and educators can ensure that every child's digital experience is safe, positive, and developmentally enriching.

It is equally important to prepare young children and support them in building resilience competencies that will be crucial to mobilising when they are facing online risks and preventing them from becoming harmful.

2. The critical role of early online safety and digital literacy

Each stage of development shapes how children engage with digital technology, influencing their cognitive growth, creativity, and learning. While digital tools offer valuable educational and social opportunities, their benefits depend on age-appropriate use, balanced screen time, and real-world interactions. Research on brain development underscores the need for mindful digital engagement, where parental guidance, content quality, and structured limitations play a crucial role. By fostering early digital literacy—covering navigation, online safety, and responsible use—alongside encouraging offline activities, children can develop a healthy and meaningful use of digital devices.

2.1 Benefits of developing early digital literacy and online safety competences

As digital technology becomes an integral part of childhood, developing early digital literacy and online safety skills is essential for preparing children to navigate the digital world responsibly. Equipping young users with these competencies not only enhances their learning and creativity but also helps them avoid risks, build critical thinking skills, and develop healthy digital habits that will serve them throughout life.

2.1.1 Promotes safe and responsible digital engagement

Early digital literacy education teaches children how to recognise risks and adopt safe behaviours online. By learning the basics of privacy, data protection, and appropriate online interactions, children can avoid exposure to harmful content, cyberbullying, and privacy breaches. Teaching young users the importance of not sharing personal information, recognising secure websites, and identifying online threats helps them develop a foundation for responsible technology use.

2.1.2 Enhances critical thinking and media awareness

In a world where children are exposed to advertisements, misinformation, and persuasive online content, early digital literacy helps them develop critical thinking skills. Teaching children how to distinguish between reliable and misleading information empowers them to make informed decisions and avoid manipulation. Understanding how online platforms recommend content, track behaviour, and present targeted ads enables children to become more discerning users of digital media.

2.1.3 Supports cognitive and social development

Digital literacy goes beyond safety—it also enhances cognitive skills and social interactions. Learning how to use age-appropriate digital tools fosters problem-solving, creativity, and communication skills. By engaging in interactive storytelling, educational games, and early coding activities, children strengthen their cognitive abilities while also developing collaboration and digital communication skills. Moreover, teaching responsible social media habits at an early age helps children navigate online interactions ethically and respectfully.

2.1.4 Prevents overuse and promotes healthy screen time habits

Children who receive early education on digital well-being are more likely to develop self-regulation skills in their screen time habits. By teaching them how to balance digital activities with offline play, social interactions, and physical movement, parents and educators can prevent issues related to overuse, digital addiction, and negative impacts on mental health. Encouraging children to set limits, take breaks, and prioritise real-world activities fosters healthier long-term technology use.

2.1.5 Prepares children for the future digital landscape

As digital literacy becomes increasingly essential for academic success and career readiness, introducing these skills early gives children a strong foundation for lifelong learning. Familiarity with basic digital tools, online collaboration, and responsible internet use prepares children for future educational and professional

environments. Moreover, as technology continues to evolve, early exposure to coding, media creation, and problem-solving technologies ensures that children are not just passive consumers but active participants in the digital age.

Developing early digital literacy and online safety skills is critical in helping children navigate the digital world confidently and responsibly. By promoting safe engagement, critical thinking, healthy screen habits, and future-ready skills, digital literacy education ensures that young users maximise the benefits of technology while minimising potential risks. Parents, educators, and policymakers play a crucial role in integrating these skills into early education to create a generation of informed, empowered, and ethical digital citizens.

2.2 Supporting the development of young children's digital literacy: the role of parents, caregivers, and educators

The successful development of early digital literacy and online safety skills relies heavily on the guidance and involvement of parents, caregivers, and educators. Young children lack the experience and cognitive maturity to navigate the digital world independently, making it essential for trusted adults to provide structured support, supervision, and education. By fostering safe and responsible digital engagement, they can help children build essential skills in critical thinking, online safety, and balanced technology use.

2.2.1 The role of parents and caregivers in digital literacy development

Parents and caregivers serve as the child's first and most influential digital mentors. Their attitudes, habits, and approaches to technology significantly shape how children interact with digital tools. Active involvement in a child's digital experiences is key to ensuring that technology is used in a safe, educational, and balanced way.

Key responsibilities of parents and caregivers include:

- Model healthy digital habits: children learn by imitating adult behaviours. Demonstrating responsible screen time use, setting boundaries for device

use, and prioritising offline interactions help establish healthy digital norms (e.g. no phones at mealtimes, no screens in the bedroom overnight etc).

- Co-use and discuss digital content: engaging with children while they use digital tools—whether by watching, playing, or learning together—reinforces positive habits and opens conversations about media literacy, content quality, and online risks.
- Encourage active and educational engagement: instead of allowing passive content consumption, parents can introduce interactive and educational digital activities such as reading apps, coding games, and creative storytelling platforms.
- Teach online safety and privacy: introducing basic internet safety rules—such as not sharing personal information, recognising safe websites, and being cautious of strangers online—helps build digital awareness and responsibility. Parents should use parental controls and privacy settings to ensure safe browsing experiences.
- Encourage digital creativity and problem-solving: parents can nurture creativity by introducing children to age-appropriate content creation tools, such as digital drawing apps, music-making platforms, and beginner-friendly coding games.
- Maintain open communication: encouraging children to ask questions, share their online experiences, and talk about any concerns fosters trust and guidance, allowing parents to address risks before they become issues.
- Establish screen time limits: prefer quality over quantity. Setting clear and consistent rules about screen time can help children maintain a balanced lifestyle that includes physical activity, creative play, and social interactions. Using tools such as screen time management apps and family media plans can help regulate usage.

2.2.2 The role of educators in digital literacy

Educators play a vital role in structuring, reinforcing, and expanding children's digital literacy skills in formal learning environments. Research has shown that schools can play a major role in building children's good habits of meaningful use of technology and resilience skills.[31] While this is not always the case, schools should provide structured digital education, helping children learn how to use technology safely, critically, and effectively.

Key responsibilities of educators include:

- Integrate digital literacy into early education: digital literacy should be woven into the curriculum as early as preschool and primary school, teaching children basic navigation, digital responsibility, and safe online behaviour.
- Teach critical thinking skills: helping children recognise reliable sources, fact-check information, and distinguish between advertisements and educational content builds media literacy and independent thinking.
- Encourage safe digital collaboration: schools can introduce secure online learning platforms where children practice responsible communication, teamwork, and digital etiquette.
- Promote digital well-being: educators can guide children in balancing online and offline activities, emphasising self-regulation strategies and mindful technology use.
- Provide safe learning environments: schools should use filtered internet access, privacy protections, and monitored digital platforms to ensure a secure educational experience for young learners.
- Partner with parents for consistency: schools should engage parents through workshops, digital literacy resources, and guidance on technology best practices to ensure a unified approach to digital learning at home and school, and find strategies to engage all parents.

[31] Livingstone, S., Stoilova, M., & Rahali, M. (2023). Realising children's rights in the digital age: The role of digital skills. KU Leuven: ySKILLS. https://doi.org/10.5281/zenodo.10201528.

2.2.3 A collaborative approach to digital literacy

The development of early digital literacy and online safety skills requires a collaborative effort between parents, caregivers, and educators. By working together to model, teach, and reinforce responsible digital behaviours, adults can help children navigate the digital world safely, think critically about online content, and develop a balanced relationship with technology. Early intervention and ongoing support are key to ensuring that children grow into capable, informed, and ethical digital citizens who can fully benefit from the opportunities technology provides.

2.3 The role of Safer Internet Centres in supporting young children, parents, caregivers, and educators in developing early online safety and digital literacy

As children engage with digital technology at increasingly younger ages, the need for structured guidance on digital literacy and online safety has never been more critical. The EU co-funded Safer Internet Centres (SICs)[32] play a key role in equipping children, parents, caregivers, and educators with the knowledge, tools, and support they need to navigate the digital world responsibly. Operating across many countries, particularly in Europe, under the EU Better Internet for Kids (BIK) initiative,[33] these centres provide educational resources, helplines, awareness campaigns, and research to foster a safer, more responsible, and empowering online environment for young users.

2.3.1 Supporting children: building digital skills and awareness

The EU co-funded Safer Internet Centres help children develop early digital literacy skills by offering age-appropriate resources, interactive learning tools, and awareness programmes designed to teach:

[32] Safer Internet Centre network, https://better-internet-for-kids.europa.eu/en/sic.

[33] Better Internet for Kids, https://better-internet-for-kids.europa.eu/en.

- online safety: understanding personal data protection, privacy settings, and recognising inappropriate content;
- responsible digital behaviour: encouraging respect, kindness, and ethical online interactions;
- media literacy and critical thinking: helping children distinguish between reliable and misleading content, including advertising and misinformation;
- healthy digital habits: promoting balanced screen time and self-regulation techniques to prevent overuse;
- reporting mechanisms: teaching children how to report cyberbullying, inappropriate content, or online threats safely and effectively.

Safer Internet Centres often provide interactive e-learning platforms, games, and child-friendly guides to engage young learners in an accessible and enjoyable way. They also collaborate with schools, libraries, and community centres to bring digital literacy education to children in various learning environments, such as through the Better Internet for Kids (BIK) MOOC (massive open online course) series available via the European Schoolnet Academy.[34]

2.3.2 Supporting parents and caregivers: guidance and mediation strategies

Parents and caregivers play a crucial role in shaping children's digital habits, yet many feel ill-equipped to guide them effectively. Safer Internet Centres empower parents with resources and tools to help them manage their child's digital experiences confidently. Key areas of support include:

- Workshops and training: Safer Internet Centres provide parenting webinars, seminars, and face-to-face workshops on online safety, screen time management, and privacy protection.

[34] European Schoolnet Academy, MOOC Child Online Safety: What educators need to know https://www.europeanschoolnetacademy.eu/courses/course-v1:BIK+ChildOnlineSafety+2025/about.

- Practical guides and toolkits: Safer Internet Centres offer step-by-step guides on how to use parental controls, set privacy settings, and discuss digital risks with children.
- Mediation strategies: Safer Internet Centres advise parents on how to co-use digital devices, set rules around screen time, and encourage a balance between online and offline activities.
- Helplines for parental support: many Safer Internet Centres run helplines where parents can receive expert advice on issues such as cyberbullying, inappropriate content exposure, and social media concerns.

By equipping parents with the knowledge and confidence to guide their children, Safer Internet Centres ensure that digital literacy education starts at home and is reinforced in daily interactions.

2.3.3 Supporting educators: integrating digital literacy into education

Schools and early childhood educators play a fundamental role in teaching digital literacy as part of a child's overall education. Safer Internet Centres collaborate with schools to train teachers, provide classroom resources, and develop digital literacy curricula. Their contributions include:

- Teacher training programmes: Safer Internet Centres provide specialised training for educators on how to integrate online safety and digital literacy topics into the classroom.
- Age-appropriate lesson plans: schools receive ready-to-use educational materials covering media literacy, online safety, and responsible internet use.
- School awareness campaigns: many Safer Internet Centres organise Safer Internet Day (SID) celebrations and school outreach events to raise awareness about digital safety among students and educators.
- Guidance on addressing online risks: teachers are trained on how to handle cyberbullying cases, inappropriate content exposure, and online privacy concerns within the school environment.

Through these initiatives, Safer Internet Centres ensure that digital literacy is not just an occasional discussion but an integral part of the educational system, helping children develop the skills they need to engage with technology safely and responsibly.

2.3.4 Providing national helplines and reporting mechanisms

Beyond education, Safer Internet Centres provide helplines and hotlines where children, parents, and educators can seek advice or report online threats. These services:

- offer confidential support for children experiencing cyberbullying, online harassment, or privacy violations;
- guide parents and educators on how to handle digital safety concerns effectively;
- provide direct reporting channels for illegal or harmful content, ensuring swift action is taken to protect young users.

By offering these services, Safer Internet Centres create a safety net for families and educators, ensuring that support is available whenever needed.

2.3.5 Raising awareness through national and international campaigns

Safer Internet Centres are instrumental in raising public awareness about online safety through large-scale campaigns, research publications, and policy recommendations. Their initiatives include:

- Safer Internet Day (SID[35]): an annual global event promoting safer and more responsible digital use among children and young people.
- National awareness campaigns: public outreach efforts to educate families about screen time management, digital well-being, and cyber threats.

[35] https://better-internet-for-kids.europa.eu/en/saferinternetday

- Collaboration with tech companies and policymakers: Safer Internet Centres work with governments, NGOs, and technology companies to shape policies and develop safer digital environments for children.

These initiatives drive meaningful change by ensuring that online safety remains a priority at the individual, community, and national levels.

2.3.6 Safer Internet Centres: key players in digital literacy development

The EU co-funded Safer Internet Centres play an indispensable role in fostering early digital literacy and online safety competences among children, parents, caregivers, and educators. Through education, support services, helplines, awareness campaigns, and policy advocacy, Safer Internet Centres help to create a safer, more informed, and digitally empowered generation. Their work ensures that young users maximise the benefits of digital technology while minimising its risks, allowing them to thrive in an increasingly digital world. In doing so, Safer Internet Centres effectively support the Digital Services Act (DSA), which aims to create a fairer and safer online world.[36]

[36] The Digital Services Act (DSA) explained - Measures to protect children and young people online, https://digital-strategy.ec.europa.eu/en/library/digital-services-act-dsa-explained-measures-protect-children-and-young-people-online.

Part II: What online safety and digital literacy to develop among young children?

3. Demystifying the digital world: what is the digital world made of?

For many young children, the digital world appears as a magical space—a screen that instantly responds to their touch, a voice assistant that answers their questions, or a video that plays with a single tap. However, it is essential to explain, in an age-appropriate way, that the digital world is not magic but a complex system built from physical technology and human intervention. Teaching children that the internet, artificial intelligence (AI), and digital platforms are powered by real-world infrastructure and human decision-making helps them develop a more grounded, critical, and informed understanding of technology.

3.1 The internet is not magic: making the invisible visible

Young children often interact with digital tools without questioning how they work. To foster digital literacy, it is crucial to explain that the internet, apps, and AI tools do not exist in an abstract 'cloud' but are powered by real, physical systems.

- Introduce the concept of networks: explain that when they use the internet, their device is talking to other computers around the world through cables, satellites, and wireless signals.
- Make it tangible: show children examples of routers, fibre optic cables, and cell towers in their environment, explaining that these allow messages, videos, and websites to travel between devices.
- Explain that AI is built by humans: teach children that AI assistants, like Siri or Alexa, are not thinking beings but programmed tools that work because people have trained them to recognise and respond to words.
- Use age-appropriate comparisons: compare the internet to a giant postal system where information is sent through different routes to reach its destination.

By grounding these explanations in real-world objects and relatable metaphors, children can develop a clearer understanding of how digital technology operates.

3.2 The physical world behind the digital one

The virtual world feels instantaneous and limitless, but it is built on physical components that work together to make digital interactions possible. Children should understand that digital tools rely on real-world technology, from hardware to vast networks of interconnected systems.

- Devices are made of physical materials: tablets, smartphones, and computers are made of elements like metals, plastics, and circuits, many of which come from mines and factories across the world.
- The internet relies on an infrastructure: every online search, video call, or game requires data centres, satellites, undersea cables, and antennas working together.
- Sensors and cameras power many digital tools: explain that voice assistants, smartwatches, and online games often collect data through microphones, sensors, and cameras to function.
- Electricity keeps the digital world running: help children understand that every time they use a device, it needs power, just like a toy or a lightbulb, making energy efficiency important.

Making these connections helps children see that even though the digital world seems intangible, it depends on real, physical objects and systems that shape how it functions.

3.3 Humans create and control the digital world

While digital technology can feel autonomous, it is important to teach children that humans design, program, and operate the systems behind the screen. This builds early critical thinking skills, helping them recognise that technology reflects human choices, biases, and values.

- Explain that people build and control technology: let children know that programmers, engineers, and designers create websites, apps, and games. AI doesn't 'think' like humans—it follows instructions written by people.
- Discuss digital decision-making: teach children that recommendations on YouTube, search engines, or social media don't appear randomly—algorithms decide what to show them based on patterns.
- Introduce digital ethics: start simple conversations about how human decisions affect technology, such as why some websites are safe while others contain harmful content.
- Encourage questions: if a child asks why an app 'knows' what they like, explain that it remembers past choices, just like a teacher remembers their favourite subject.

By understanding that humans are behind digital tools, children will become more thoughtful about how they interact with technology rather than simply trusting everything they see on a screen.

3.4 Teaching these concepts through age-appropriate mediums

Since abstract explanations can be challenging for young children, using hands-on activities, storytelling, and interactive learning methods can make these concepts more engaging and understandable.

3.4.1 Toddlers (2–4 years old)

- Raise awareness among parents and teachers about their role as role models.
- Encourage toddlers' online activities in co-usage with their parents for a limited and balanced time.

3.4.2 Preschoolers (4–6 years old)

- Use physical objects like toy cars and tunnels to demonstrate how the internet sends information.

- Read storybooks that explain how computers and networks work in simple terms.
- Watch kid-friendly videos that show how digital information moves from one place to another.

3.4.3 Early school age (6–8 years old)

- Let children take apart an old device (with supervision) to explore the hardware inside.
- Visit a science museum or exhibit with displays on telecommunications and digital technology.
- Introduce simple coding activities to help them see how humans give instructions to machines.

By using age-appropriate, interactive methods, children can develop a curiosity about technology that encourages them to think critically about the digital world.

3.5 A more informed generation of digital users

Helping children understand that the digital world is built from physical technology, human programming, and structured networks is crucial for developing their early digital literacy. By breaking the illusion of digital 'magic' and making technology more tangible, children can develop a critical, informed, and empowered approach to the digital tools they use daily. This foundational knowledge will help them navigate technology safely, responsibly, and with greater curiosity about how things work—essential skills for the future.

4. Healthy digital habits in young children's daily routines

As digital devices become a normal part of childhood, it is essential to teach young children self-control and self-discipline in managing their screen time. Developing healthy digital habits from an early age helps children learn when, what, how, with whom, and how much they should use digital devices. By integrating these habits into daily routines, children can build a balanced relationship with technology, ensuring it supports their well-being rather than becoming a source of overuse or distraction.

4.1 Teaching children to manage when and where they use digital devices

Helping children set clear boundaries on screen time use is an essential part of self-regulation and digital well-being. Parents and caregivers should establish consistent routines that teach children when digital devices are appropriate and when they should focus on other activities.

- Avoid digital device use in bedrooms: keeping screens out of bedrooms helps children associate their rooms with rest, relaxation, and offline activities rather than constant digital engagement. This also reduces exposure to screens before bedtime, which can disrupt sleep patterns due to blue light exposure.
- No screens after dinner or before bedtime: establishing a 'screen-free time' after dinner allows children to unwind, engage in family interactions, and transition to a bedtime routine without digital stimulation. Instead, encourage reading, storytelling, or quiet play.
- Designate 'screen-free zones' in the home: creating areas where screens are not allowed (such as the dining table or outdoor spaces) helps reinforce mindful engagement in meals, family conversations, and physical activities.

4.2 Teaching what content to choose: encouraging meaningful digital use

Not all screen time is equal—some digital activities support learning and creativity, while others encourage passive consumption. Teaching children to be purposeful about their digital choices ensures they engage in enriching content rather than mindlessly scrolling.

- Encourage active digital engagement over passive consumption: instead of letting children watch random videos or play repetitive, unchallenging games, guide them toward activities that require thinking, creativity, or learning, such as:
    - educational apps (e.g., interactive storytelling, early coding programs);
    - creative activities (e.g., drawing, making music, digital storytelling);
    - cooperative games that involve problem-solving or teamwork.
- Teach the difference between quality and low-quality content: help children understand that not all digital content is equally beneficial. Use tools like kid-friendly search engines and parental control filters to help them discover enriching content rather than low-value entertainment.[37]
- Promote the idea that screens are for specific purposes: set an expectation that screens should be used with intention—whether for playing, learning or communicating—rather than as an automatic response to boredom.

4.3 Teaching how to use digital devices mindfully and with whom

Developing digital self-discipline means helping children be intentional about how and with whom they interact in digital spaces.

- Encourage co-use and social digital activities:

[37] A guide to positive online content created under the BIK Portal is available in multiple languages at https://better-internet-for-kids.europa.eu/en/guide-positive-online-content.

- Instead of using screens in isolation, encourage children to use devices with family members, friends, or as part of interactive learning experiences.
- Watching educational videos together or playing cooperative games can help children reflect on what they see and learn.

- Teach the importance of digital etiquette and mutual respect: from an early age, children should learn that their digital interactions have real-world consequences. Teach them:
  - to ask permission before sharing photos or videos of others;
  - to be kind in online interactions, avoiding harmful comments or messages;
  - to respect digital boundaries, such as understanding when it's appropriate to call or message someone.
- Introduce 'pause and reflect' moments: teach children to pause before clicking, posting, or watching something. Ask simple guiding questions, like:
  - Why do I want to use my tablet right now?
  - Is this activity useful or just a habit?
  - How do I feel after watching this?

By incorporating these reflection habits, children learn to regulate their digital choices independently over time.

4.4 Teaching how much: the importance of balancing screen time with other activities

One of the most critical aspects of healthy digital habits is teaching children to balance screen time with other essential daily activities. This ensures they develop a well-rounded routine that supports physical health, mental focus, and social development.

- Set daily routines that include a variety of activities: help children understand that screen time is just one part of their day, alongside:
  - outdoor play and physical activity;
  - creative and hands-on activities (e.g., arts, puzzles, building blocks);
  - face-to-face interactions with family and friends;
  - quiet time for reading, reflection, or resting.
- Use visual schedules for screen time: visual schedules (charts with icons or drawings) help children see the structure of their day, making it easier for them to follow screen time limits.
- Encourage device-free play: set a daily goal for at least an hour of non-digital play, such as:
  - playing with toys;
  - engaging in outdoor activities;
  - doing puzzles, crafts, or storytelling.
- Encourage self-regulation through play: introduce games that reinforce patience and waiting skills, such as board games, turn-based activities, or role-playing exercises. These naturally help children develop self-discipline, focus, and impulse control, which translates to better screen time management.

4.5 Encouraging children to engage in activities mindfully and purposefully

In addition to balancing their activities, children should learn to fully engage in each experience, rather than being distracted by screens.

- Promote mindful engagement in activities: encourage children to be fully present when doing activities like:
  - eating meals without distractions (no screens at the table);
  - enjoying outdoor play without checking a device;

- focusing on one activity at a time, whether it's a craft, puzzle, or conversation.

- Use the 'one thing at a time' rule: teach children that multitasking with screens (e.g., watching a video while playing with toys) reduces focus. Encourage them to complete one activity before switching to another.
- Create tech-free family rituals: establish habits like reading together before bed, taking family walks without devices, or having dedicated 'unplugged' playtime to reinforce the value of offline experiences.

4.6 Developing digital self-regulation for a healthier future

Teaching young children self-discipline and control over their digital habits is essential for their long-term well-being. By integrating healthy screen time practices into daily routines, children learn when, what, how, with whom, and how much to engage with digital devices. These foundational habits not only prevent overuse and digital dependency but also help children build self-regulation skills, mindfulness, and a balanced approach to life.

Key takeaways for parents and educators include:

- Set clear screen time boundaries (no screens in bedrooms, after dinner, or during family time).
- Encourage intentional digital use (quality content over passive scrolling).
- Promote balanced routines (screen time is just one part of the day).
- Teach mindfulness and self-regulation (pause before clicking, engage in activities fully).
- Foster social and creative offline experiences (hands-on play, family interactions, and outdoor activities).

By starting early and reinforcing these habits consistently, children will develop a healthier, more mindful approach to digital technology, ensuring it remains a beneficial tool rather than a controlling force in their lives.

5. Adapting the 5Cs model of online risk to young children

As young children begin exploring the digital world, they need age-appropriate guidance to help them understand online risks and safe internet habits. The 5Cs online risks categorisation model—which includes content, contact, conduct, commercial, and cross-cutting risks—provides a structured way to teach children about potential dangers. However, for young learners, these risks should be explained in simple, relatable terms that help them recognise and respond to unsafe situations online.

By breaking down these risks into easy-to-understand concepts and using engaging storytelling, visuals, and interactive discussions, children can develop digital awareness while feeling empowered to ask for help when needed.

5.1 Overview of the 5Cs model of online risk

As we have seen in section 1.5, the 5Cs model categorises online risks into five main groups:

- Content risks: when children see something scary, confusing, or inappropriate online.
- Contact risks: when a stranger or unknown person tries to communicate with them.
- Conduct risks: when a child's own actions online might cause problems, like being unkind or oversharing.
- Commercial risks: when websites or apps try to trick them into buying things or collecting their information.
- Cross-cutting risks: risks that affect well-being, such as too much screen time, privacy concerns, or unsafe habits.

Since young children may not yet understand complex online threats, adapting this model into simple stories and real-world examples makes it easier for them to grasp these concepts.

5.2 Teaching the 5Cs model of online risk in age-appropriate language

Below is a simplified version of the 5Cs model, written in a way that a 5-year-old can understand:

5.2.1 Content risks: be careful WHAT you see!

👀 *"Sometimes, when we play on the internet, we might see pictures or videos that make us feel scared, sad, or confused. If that happens, we should stop looking and tell a grown-up right away."*

- Example for kids: *"Imagine you're watching a fun cartoon, but suddenly, a strange or scary video pops up. If that happens, what should you do?"*
- Action: *"Tell an adult, close the app, and never keep watching something that makes you feel bad."*

5.2.2 Contact risks: be careful WHO you talk to!

💬 *"Not everyone online is who they say they are. If someone you don't know tries to talk to you in a game or on a website, don't answer them. Always tell a grown-up."*

- Example for kids: *"Imagine you're playing a game and a person you don't know sends you a message asking 'What's your name?' What should you do?"*
- Action: *"Never talk to strangers online, never share your name, and tell a trusted adult immediately."*

5.2.3 Conduct risks: be KIND and CAREFUL online!

🫶 *"The way we act online matters. We should always be kind, just like in real life. Never say mean things or share private information, like your name, school, or where you live."*

- Example for kids: *"If you feel upset during a game, should you type mean words to the other player?"*
- Action: *"No! Always be kind, and if someone is mean to you, tell an adult."*

5.2.4 Commercial risks: watch out for TRICKY ADS!

💰 *"Some apps and websites try to get us to buy things, click on buttons, or give away personal information. Always ask an adult before clicking on something that looks like a prize or special offer."*

- Example for kids: *"You see a big button that says, 'CLICK HERE TO WIN A PRIZE!' Should you click it?"*
- Action: *"No! It might be a trick to get my information or money."*

5.2.5 Stay SAFE and HEALTHY!

⚠ *"Spending too much time on screens can make us feel tired or grumpy. We need breaks, outdoor play, and rest to stay happy and healthy."*

- Example for kids: *"You've been playing on your tablet for a long time, and your eyes feel tired. What should you do?"*
- Action: *"Take a break, play outside, or do something fun without a screen."*

5.2.6 Privacy risks: keep your information SECRET!

🔐 *"Some things about you are private and should never be shared online, like your name, where you live, your school, or pictures of yourself. If an app or website asks for personal information, always ask a grown-up first."*

- Example for kids: "*Imagine you are playing a fun online game, and it asks you to type your name and where you live to get a special reward. Should you do it?*"
- Action: "*No! I should ask a grown-up first and never share personal details with a game or website.*"

5.3 Making the 5Cs model of online risk engaging for young children

To ensure children understand and remember these safety rules, parents and educators can use fun and interactive learning methods:

Role-playing games: act out scenarios where a child encounters an online risk, and let them practice how to respond.

Draw and explain: have children draw pictures of safe and unsafe online behaviours and talk about them.

Storytime with lessons: read and discuss books about online safety.

Traffic light system: teach children to use red (stop and tell an adult), yellow (be careful), and green (safe to use with permission) to decide what to do online.

Use the 'ask before you click' rule: encourage children to always ask a parent or teacher before clicking on ads, links, or messages from strangers.

5.4 Empowering children with early online safety awareness

Teaching the 5Cs model in a child-friendly way helps young children recognise digital risks without feeling scared. By using simple language, interactive learning, and real-life examples, children can develop healthy digital habits and feel comfortable asking for help when needed.

When parents, caregivers, and educators introduce these safety concepts early, children gain confidence, self-control, and digital awareness, ensuring they navigate the online world safely and responsibly as they grow.

6. Accompanying children in their evolving understanding of the digital world

As children grow and their use of digital technology evolves, their understanding of the online world changes too. At first, young children may see the internet as a magical place, where videos, games, and apps simply appear. However, as they gain experience, they start to question how things work, who is behind the content they see, and what rules they should follow. This evolving understanding requires active support from parents, caregivers, and educators, who should learn alongside children to develop essential digital literacy and safety skills together.

By engaging in shared digital activities, adults can guide, support, and model safe, responsible, and balanced digital behaviours while also building their own knowledge of online risks and best practices.

6.1 At home: learning together - a collaborative approach to digital literacy

Children are naturally curious and eager to explore new technologies, but they lack the critical thinking skills and life experience to navigate the digital world safely. Instead of leaving them to explore on their own, parents and caregivers should actively engage with them, learning and adapting together.

Why learning together?

- Children benefit from adult guidance to understand what is safe and appropriate.
- Parents and caregivers stay informed about new trends, risks, and opportunities in digital spaces.
- It creates an open and trusting relationship, where children feel comfortable asking for help.

Key strategies for co-learning:

- Explore new apps, games, and websites together before children use them independently.
- Ask open-ended questions like: What do you like about this game? What would you do if you saw something scary or confusing?
- Learn from children's experiences, as they may discover features or platforms that adults are less familiar with.

6.1.1 Explore digital activities together at home to develop online safety competences

The best way to teach children about digital safety and literacy is through shared activities that are engaging and interactive. These activities help both children and adults develop essential online safety skills while having fun together.

Co-play digital games

- Playing child-friendly online games together allows parents to see what children are exposed to while teaching them about online interactions, in-game purchases, and respectful behaviour.
- Example: while playing a game with a chat function, pause and discuss: "*What would you do if a stranger sent you a message?*"

Explore educational content together

- Watch age-appropriate videos or read interactive e-books about digital safety and online risks.
- Example: websites like Common Sense Media[38] or Safer Internet Centres[39] provide kid-friendly explainer videos on privacy, screen time, and online kindness.

[38] Common Sense Media - https://www.commonsensemedia.org/
[39] BIK - Safer Internet Centres - https://better-internet-for-kids.europa.eu/en/sic

Practice safe internet searching

- Teach children how to use search engines responsibly and identify trustworthy websites.
- Example: use a kid-safe search engine (like *Kiddle*) and compare results to show how different sources provide different information.

Try coding or creative digital projects together

- Engaging in digital creativity helps children understand that technology is a tool for learning and creation, not just passive entertainment.
- Example: use beginner-friendly coding apps like *ScratchJr* to create simple games or animations.

6.1.2 Teaching good tips for staying safe and healthy online

As children's digital habits evolve, they must learn key strategies to stay safe and maintain a healthy balance. Adults should model these behaviours and discuss them regularly during digital activities.

Tip #1: Set screen time limits together

- Instead of enforcing strict rules, involve children in deciding how much screen time is appropriate.
- Example: create a visual schedule where children can balance screen time with outdoor play, reading, and family time.

Tip #2: Encourage breaks and mindful digital use

- Teach children to notice when they feel tired or distracted from too much screen time.
- Example: use the '20-20-20 rule'—every 20 minutes, look at something 20 feet away for 20 seconds to rest your eyes.[40]

[40] A review of scientific research of the effects of screen time on eyes underlines the link between the amount of screen time and the development of myopia. Other symptoms may arise like dry eye or blurred vision. European Commission: Joint Research Centre, Beullens, K., Bozzola, E., Cataldo, I., Hale, L., Kent, M., Montag, C., Nivins, S., O'Reilly, M., Rubæk, L., Schiøtz Thorud, H.-M., Sterpenich, V. and Vandenbosch, L., Minors' health and social media: an interdisciplinary scientific

Tip #3: Model safe online behaviour

- Children learn from what they see. If parents practice safe online habits, children will follow.
- Example: when using a device together, narrate your actions: "*I'm checking if this website is safe before clicking.*"

Tip #4: Keep communication about digital activities open

- Encourage children to ask for help if something online confuses or upsets them.
- Example: have a family rule like "*If you see something strange online, we talk about it together—no one gets in trouble.*"

Tip #5: Stay curious and keep learning

- The digital world is always changing, so it's important to stay informed and adapt.
- Example: set aside time for family tech check-ins where you explore new apps, privacy settings, and online trends together.

6.1.3 Building digital awareness as a family

Helping children navigate the digital world should not be a one-time lesson—it's an ongoing process. By engaging in digital activities together, learning alongside children, and modelling responsible technology use, families can develop a shared understanding of digital literacy and safety.

Key takeaways:

- Co-use digital tools with children to teach them safety and critical thinking.
- Make learning interactive with games, searches, and creative projects.
- Talk about online experiences openly so children feel safe asking for help.
- Adapt and grow together as technology changes.

perspective, Manolios, S., Sala, A., Sundorph, E., Chaudron, S. and Gomez, E. editor(s), Publications Office of the European Union, Luxembourg, 2025, https://data.europa.eu/doi/10.2760/3795891, JRC141090.

By taking this collaborative and supportive approach, children will develop the skills they need to stay safe, responsible, and confident in the digital world—while adults remain informed and engaged in their child's digital journey.

6.2 In the classroom: accompanying children in their evolving understanding of the digital world

As children grow and their use of digital technology evolves, so does their understanding of how the digital world works. In the classroom, students should not only learn how to use technology but also develop critical thinking, online safety skills, and responsible digital habits. Teachers play a key role in guiding students through their digital journey, helping them explore technology in a safe, informed, and purposeful way.

By integrating shared digital activities, discussions, and collaborative learning experiences, teachers and students can learn together, building essential digital literacy skills while staying up to date with online trends, risks, and opportunities. Digital competences should be embedded into the curriculum horizontally, not only as part of computing lessons, and should be the responsibility of the entire school staff.

6.2.1 Learning together: a collaborative approach to digital literacy

Children are naturally curious about technology, but they lack the experience to recognise risks or evaluate digital content critically. Instead of simply teaching digital rules, teachers should engage students in co-learning experiences, where both students and educators explore how digital tools work, how to stay safe, and how to use technology responsibly.

Why learning together?

- Students benefit from guided exploration and classroom discussions about online safety.
- Teachers stay updated on new technologies, trends, and risks by engaging with students' experiences.

- It fosters a supportive learning environment, where students feel comfortable asking for help.

Key strategies for co-learning in the classroom:

- Explore new apps, tools, and platforms together before students use them independently.
- Encourage students to ask questions about online content, game features, or social media trends.
- Use real-life examples and class discussions to teach digital decision-making skills.

6.2.2 Doing digital activities together to develop essential competences

The best way to teach digital literacy and online safety is through shared classroom activities that are engaging, interactive, and practical. These activities help both students and teachers develop essential digital skills together while reinforcing positive online behaviours.

Co-explore digital games and learning tools

- Allow students to test new educational apps and online tools in a guided setting.
- Example: let students explore an educational website, then discuss how to tell if it's trustworthy and what signs of misinformation to look for.

Practice safe searching together

- Demonstrate how to use search engines responsibly and recognise credible sources.
- Example: ask students to research a topic using different websites, then compare their sources to determine which ones are reliable.

Engage in digital storytelling and content creation

- Encourage students to create digital stories, animations, or presentations using safe online tools.

- Example: use beginner-friendly platforms like *Scratch* or *Book Creator* to make short digital projects while discussing privacy, respectful online behaviour, and content-sharing ethics.

6.2.3 Teaching good tips for staying safe and healthy online

As students' digital habits evolve, they must learn key strategies to stay safe and maintain a healthy balance. Teachers should integrate digital well-being discussions into classroom activities.

Tip #1: Set class-wide screen time expectations

- Discuss with students when, where, and how digital devices should be used in class.
- Example: create a 'tech use agreement' as a class, setting clear expectations for device use, screen breaks, and respectful online behaviour.

Tip #2: Encourage breaks and mindful technology use

- Teach students to take breaks from screens and practice self-regulation.
- Example: use the '20-20-20 rule'—every 20 minutes, look at something 20 feet away for 20 seconds to rest your eyes.

Tip #3: Discuss digital etiquette and online kindness

- Promote respectful communication in digital spaces, just like in real life.
- Example: have students create 'digital kindness posters', illustrating good online behaviours.

Tip #4: Keep an open classroom culture for digital discussions

- Create a safe space where students can ask questions about their online experiences.
- Example: set up a weekly 'tech talk' session, where students can share digital challenges or ask for advice.

Tip #5: Stay curious and keep learning together

- Digital trends change quickly, so teachers and students should stay open to learning from each other.
- Example: assign students as 'tech helpers' who explore new apps, trends, or safety tips and share them with the class.

6.2.4 Building digital awareness as a classroom community

Helping students navigate the digital world is an ongoing process, not a one-time lesson. By engaging in shared digital activities, learning alongside students, and modelling responsible technology use, teachers can create a classroom environment where students feel confident and informed about digital literacy and online safety.

Key takeaways for educators:

- Co-explore digital tools with students to guide safe and responsible use.
- Use interactive activities to teach online safety and critical thinking.
- Encourage open discussions so students feel comfortable sharing their digital experiences.
- Adapt and grow together as digital trends and risks evolve.

By working collaboratively, teachers and students can develop strong digital habits, critical thinking skills, and a responsible approach to online engagement, ensuring that technology is a powerful tool for learning, not a source of harm.

6.3 Alone: young children's individual use of digital devices

While many parents and caregivers actively guide their children's digital use, research shows that a significant number of young children (ages 0–8) engage with digital devices independently, with little or no supervision. This unsupervised usage often happens for practical reasons, such as when parents are busy with work or household responsibilities, or because children become comfortable navigating technology on their own. However, individual usage without parental guidance

presents both benefits and risks, shaping a child's relationship with technology in important ways.

6.3.1 When and how young children use devices independently

Young children often use digital devices alone in different settings, such as:

- At home: watching videos or playing games in their bedroom or another room away from adults.
- During car rides or waiting times: using a smartphone or tablet as a distraction.
- At a relative's or friend's house: playing on devices that belong to others, sometimes without clear rules.
- In school settings: using educational software or digital learning tools with limited direct supervision.

6.3.2 Why do parents allow independent digital use?

Many parents allow unsupervised digital use for several reasons:

- Convenience: digital devices help keep children occupied while parents work or do chores.
- Children's increasing digital skills: many young children quickly learn how to navigate apps, games, and streaming platforms, making parental intervention seem unnecessary.
- Perceived educational value: some parents trust digital tools to support learning, even without their direct involvement.

By balancing autonomy with responsible oversight, parents can help young children build digital habits that are safe, educational, and age-appropriate.

6.3.3 An ideal age for first digital device ownership

The question of when children should get their first digital device is widely debated among parents, educators, psychologists, and policymakers. With different types of devices—tablets, game consoles, smartphones, and laptops—each serving different

purposes, there is no universal agreement on the 'right' age for ownership. Instead, the debate reflects concerns over technology's benefits and risks, varying family values, and evolving societal norms.

6.3.4 Different devices: different ages of ownership

- Tablets (ages 3–6): many children are introduced to shared family tablets at an early age for educational apps, drawing, and watching videos. Personal tablet ownership typically starts at around 5–7 years old and is often used for learning.
- Game consoles (ages 6–10): game consoles, such as *Nintendo Switch*, *PlayStation*, or *Xbox*, are often introduced between 6 and 10 years old, depending on parental preferences and concerns about screen time.
- Smartphones (ages 8–13): the most debated device. Some argue that children should have a phone by the age of 8–10 for emergencies and start entering the online world to gradually understand the codes of use and 'do's and don'ts'.[41] Others argue it should be delayed until the ages of 12–14 to prevent social media exposure and excessive screen time.[42]
- Laptops (ages 10–14): generally introduced in late elementary or middle school when children start needing them for homework, research, and coding or creative activities.

6.3.5 Key arguments for and against early device ownership

Arguments in favour	Arguments against
Educational benefits Tablets and laptops can support early learning, reading, and creativity through educational apps and platforms.	**Mental health and screen addiction** Early device ownership is linked to excessive screen time, social media pressure, and reduced physical activity.

[41] Protecting, not excluding: why banning children from social media undermines their rights, https://www.lse.ac.uk/media-and-communications/research/research-projects/eu-kids-online/bans.

[42] Patto Educativo Digitale della città di Milano, linee guida operative, https://www.benesseredigitale.eu/i-progetti/patto-educativo-digitale-della-citta-di-milano/.

Safety and communication Giving children a smartphone at a younger age allows parents to stay in touch and monitor their location.	**Online risks and cyberbullying** Young children may not be mature enough to handle online interactions, privacy risks, or exposure to harmful content.
Digital skills development Introducing devices early helps children develop technological literacy, which is essential in today's digital world.	**Reduced attention span and creativity** Constant access to screens can limit offline play, reading, and creativity, and reduce attention spans.
Social inclusion Many children want devices because their peers have them, and not having one may lead to feeling left out.	**Parental control challenges** Once a child has personal ownership of a device, it becomes harder for parents to monitor and set limits.

6.3.6 Balancing the approaches: a gradual, meaningful introduction with parental oversight

Many experts suggest a step-by-step approach, where children gain access to devices in stages before full ownership. Some recommendations include:

- Shared family devices first: before personal ownership, children should learn how to use technology responsibly on shared devices, under a personal account to avoid the risks of encountering inappropriate content or to willingly share personal information publicly.
- Training on digital responsibility: schools and families should teach screen time balance, privacy, and safe online interactions before giving personal devices.
- Basic phones before smartphones: instead of giving a full smartphone, parents can start with basic phones that allow only calls and texts.
- Parental controls and tech agreements: if a child receives a device, parents should set rules on usage, screen time, and safe internet habits. They might also consider using parental control tools that they can tailor according to their needs and the evolving capacities of their child.

6.3.7 A personal decision based on the child's maturity and needs

We can conclude that the ideal age for device ownership depends on:

- The child's maturity level: can they follow rules, handle responsibility and manage time?
- The purpose of the device: is it for learning, safety, or entertainment?
- Parental supervision and guidance: can parents talk about online activities with their child, monitor usage and teach responsible habits?
- The digital culture in their environment: are their friends and school using technology regularly?

While there is no one-size-fits-all answer, experts agree that gradual introduction, digital literacy education, and parental involvement are key to ensuring that device ownership enhances, rather than harms, a child's development.

Part III: Engaging with young children

7. Challenges of working with young children

Safer Internet Centres face various challenges that constitute barriers and obstacles to the development of online safety and digital literacy in early childhood. This section provides suggestions on ways to overcome them, alongside possible ethical issues and dilemmas. Elements of further reflection are provided through case studies.

7.1 Barriers and obstacles to the development of online safety and digital literacy in early childhood

While early digital literacy and online safety education are essential for helping young children navigate the digital world, various barriers and obstacles can hinder their development. These challenges arise from socioeconomic factors, parental and educational limitations, technological gaps, and developmental constraints. Addressing these barriers is crucial to ensuring that all children can build safe, responsible, and effective digital habits from an early age.

7.1.1 Limited parental awareness and digital skills

One of the biggest challenges in early digital literacy is that many parents and caregivers lack awareness, confidence, or knowledge about online risks and best practices.

- Parents with low digital literacy: some parents are unfamiliar with online safety tools, privacy settings, or age-appropriate content, making it harder for them to guide their children effectively.
- Assumption that young children don't need digital literacy: some parents believe that online risks only apply to older children and delay digital education, leaving young children unprepared: with rapidly changing digital platforms, games, and social media trends, parents may struggle to stay informed.

- Over-reliance on parental controls: some parents believe that technical solutions (e.g., parental control apps, safe search filters) are enough to protect children without actively discussing safe behaviours and critical thinking skills.

Possible solutions include:

✓ Parental digital literacy workshops: schools and organisations can offer training sessions to help parents understand online risks, privacy settings, and healthy screen habits.

✓ Encouraging co-use of technology: parents should engage in digital activities with their children, learning and teaching together.

7.1.2 Lack of online safety education in early childhood curricula

In many schools and early childhood education settings, digital literacy and online safety are not prioritised in early learning curricula.

- Focus on traditional literacy and numeracy: early education often emphasises reading, writing, and basic math, while digital literacy is introduced much later.
- Lack of teacher training: many educators do not receive training on how to integrate digital literacy and online safety into early childhood education.
- Unequal access to digital resources in schools: some schools lack funding for digital tools, making it difficult to introduce online safety in a structured, hands-on way.

Possible solutions include:

✓ Integrate digital literacy into early education: online safety should be taught alongside reading and numeracy as a core 21st-century skill.

✓ Professional development for teachers: educators need training and resources to confidently teach digital citizenship, safe browsing, and online responsibility.

7.1.3 Socioeconomic and digital access barriers

- The digital divide: not all families have equal access to the internet, digital devices, or educational technology. Children from low-income households may have:
  - limited or no access to computers or tablets at home;
  - unstable internet connections, making it hard to develop digital literacy skills;
  - lower exposure to educational apps and parental guidance on technology use.
- Economic pressures and parental workload: parents working long hours or multiple jobs may lack time to monitor or guide their child's digital use.

Possible solutions include:

✓ Community access programmes: public libraries, schools, and community centres can provide digital literacy workshops and safe internet access.

✓ Affordable and accessible digital resources: governments and organisations should ensure all families have access to age-appropriate digital tools.

7.1.4 Early developmental challenges and cognitive barriers

Young children (ages 0–8) face natural cognitive limitations that make it difficult for them to fully grasp online risks.

- Limited critical thinking skills: young children struggle to distinguish between real and fake online content (e.g., believing everything they see on YouTube is true). They also have difficulty recognising when someone online is being deceptive.
- Impulse control and instant gratification: many apps and games are designed to reward instant actions, making it hard for children to pause and think before clicking or sharing personal information.

- Short attention spans: traditional lessons on online safety may not be engaging enough, leading children to lose interest quickly.

Possible solutions include:

✓ Use age-appropriate teaching methods: teach online safety through stories, role-play, and interactive games rather than lectures.

✓ Introduce simple, repeatable rules: use easy-to-remember rules like:

- 'Stop, close, tell' (if you see something scary, stop looking, close the app, and tell a grown-up).
- 'Ask before you click' (always check with an adult before tapping on pop-ups or ads).

7.1.5 Exposure to unsafe digital environments and poor online content

Even with good parental guidance and education, children can still be exposed to unsafe digital environments due to:

- Poorly designed kids' apps and platforms: some apps and streaming services fail to properly filter out inappropriate content, allowing children to stumble upon:
  - scary, violent, or adult-themed content on YouTube or social media;
  - hidden advertising disguised as 'kid-friendly' content.
- Online social pressure and peer influence: even at a young age, children may:
  - feel pressure to use certain apps or games because their friends or siblings use them;
  - be exposed to older children's digital habits, such as accessing social media too early.

Possible solutions include:

✓ Stronger parental controls and safer digital spaces: encourage age-appropriate platforms like YouTube Kids, but always review content before allowing children to watch unsupervised.

✓ Digital media literacy from an early age: teach children:

- how to tell if a video is fake or misleading;
- why some apps try to trick them into buying things;
- how to recognise and reject social pressure to use unsafe apps.

7.1.6 Overcoming barriers to early digital literacy

While many obstacles can slow down the development of online safety and digital literacy in early childhood, solutions exist to make digital learning accessible, age-appropriate, and engaging.

Key takeaways:

- Empower parents and educators: offer training and tools to help adults guide children's digital experiences.
- Make digital literacy part of early education: teach online safety, privacy, and screen time balance as a core skill from an early age.
- Close the digital divide: ensure all families have access to safe and educational digital resources.
- Adapt teaching to developmental levels: use storytelling, games, and role-play to make digital safety fun and memorable for young learners.

By addressing these challenges, families, schools, and communities can work together to ensure that all children grow up with the skills they need to be safe, responsible, and confident digital citizens.

7.2 Addressing ethical issues while raising awareness among young children about online risks and early digital literacy

Teaching online safety and digital literacy to young children (ages 0–8) involves ethical considerations that require careful handling. While it is essential to raise awareness about digital risks, educators and parents must do so in ways that are age-appropriate, respectful of children's rights, and mindful of their cognitive and

emotional development. Key ethical concerns include how to introduce sensitive topics like harmful content, obtaining informed consent from children, and the consequences of introducing new digital devices.

7.2.1 Addressing harmful content themes in an age-appropriate way

Young children are naturally curious but may lack the emotional and cognitive maturity to process certain harmful or distressing online content, including violence, misinformation, and scary or exploitative media. Raising awareness about these risks without instilling fear requires thoughtful communication strategies.

Ethical considerations:

- Avoid over-exposing children to fearful topics: discussions about online risks should not overwhelm or scare children but instead focus on empowerment and safe decision-making.
- Use positive framing: instead of saying "*The internet is dangerous*" say, "*The internet is full of great things, but sometimes we see things that aren't meant for kids. If that happens, you can always ask for help.*"
- Adapt explanations to their age: a 3-year-old may only need to know "*If something makes you feel bad, tell an adult,*" while a 7-year-old can understand "*Some people put things online that aren't true, and we have to check with someone we trust.*"

Practical strategies:

- Use storytelling and role-playing: create simple stories where a character encounters an online risk and makes a smart choice (e.g., telling an adult, closing an app, ignoring a message from a stranger).
- Teach emotional awareness: use emotion charts to help children identify and express how they feel when they see something online that makes them sad, scared, or confused.
- Give children an 'exit strategy': teach them the 'stop, close, tell' rule (stop looking, close the app, tell a grown-up) if they encounter harmful content.

Why is this ethical?

- It prevents unnecessary anxiety while still preparing children to handle risks safely.
- It respects their developmental stage, ensuring they are not burdened with excessive fear.

7.2.2 Obtaining informed consent from young children for digital use

Children under 8 do not fully understand digital privacy, data collection, or the implications of agreeing to online terms. Ethical teaching practices should ensure that children's consent is meaningful and that they are actively involved in decisions about their digital experiences.

Ethical considerations:

- Can young children truly consent? Getting fully informed consent from children under 8 can be tricky given their cognitive capacity. Still, they should be given age-appropriate explanations and the right to say yes or no to activities within safe limits set by adults.
- Parental responsibility versus child autonomy: while parents/caregivers make final decisions about digital use, they should involve children in discussions about how and why technology is being used.
- Avoid exploitative data collection: many digital platforms collect data on children's behaviour. Educators and parents should favour platforms with strong privacy protections and explain, in simple terms, what happens to their information.

Practical strategies:

- Use 'yes-no' choices instead of complex agreements: instead of asking, "*Do you accept the privacy policy?*" ask "*Would you like me to help you choose a safe app together?*"

- Introduce the concept of digital footprints: explain that when they play games, watch videos, or use apps, information is collected, just like footprints in the sand. Encourage them to ask before clicking or sharing.
- Teach the 'ask first' rule: children should learn that before signing up for a new game, downloading an app, or using a device, they must ask a trusted adult first.

Why is this ethical?

- It helps children develop early autonomy and responsibility for their digital choices.
- It protects their right to privacy while guiding them to make informed digital decisions.

7.2.3 Considering the consequences of introducing a new digital device

Giving a child access to a new digital device (e.g., tablet, game console, smartphone) has long-term consequences for their habits, social interactions, and cognitive development. Ethical decision-making requires considering the child's readiness, setting clear boundaries, and ensuring positive engagement.

Ethical considerations:

- How will this device change daily routines? Will it reduce outdoor play, social interactions, or sleep?
- What skills and responsibilities should come first? Before getting their own tablet or console, should the child first learn about screen time balance, privacy, and online kindness?
- Is the device needed for learning or social inclusion? Some children need a device for schoolwork or to connect with friends, while others may receive one too early without a clear purpose.

Practical strategies include:

- Gradual introduction: instead of giving a child full ownership, start with shared family use before transitioning to individual use.

- The 'device agreement' rule: before giving a new device, create a simple contract with the child covering:
  - where and when they can use it;
  - what apps/games are allowed;
  - screen time limits.
- Reflect before buying: ask "*Does my child need this device now, or are there alternative ways to introduce technology in a controlled way?*"

Why is this ethical?

- It encourages responsible, mindful tech use instead of impulsive or unnecessary digital consumption.
- It ensures that device introduction aligns with the child's cognitive and emotional readiness.

7.2.4 Respecting children's digital rights while ensuring their safety

Teaching digital literacy involves balancing safety measures with respect for children's rights, including their right to learn, explore, and express themselves online.

Ethical considerations:

- Avoid over-restricting: overprotective measures (e.g., blocking all online interactions) can prevent children from developing digital skills, curiosity, and independence.
- Monitor without spying: while parental monitoring is necessary, excessive surveillance can undermine trust. Instead of reading every message, focus on teaching children how to recognise and handle risks.
- Encourage safe self-expression: children should feel safe expressing themselves creatively online (e.g., drawing apps, storytelling games) while learning what is appropriate to share.

Practical strategies include:

- Teach 'private versus public' sharing: help children understand what's okay to share with friends versus strangers versus no one.
- Use open discussions instead of hidden surveillance: instead of secretly checking a child's online activity, explain: "*I will check what apps you use to make sure they are safe, but I won't read your private messages unless there's a problem.*"
- Encourage digital creativity in safe spaces: introduce children to creative platforms with built-in protections (e.g., coding apps, storytelling platforms, digital art tools).

Why is this ethical?

- It respects children's developing autonomy while ensuring protection from online harm.
- It promotes trust between children and caregivers, fostering open communication about digital experiences.

7.2.5 A balanced approach to ethical digital literacy

To conclude this section, we can see that ethical online safety education should:

- Empower, not scare: teach children how to navigate risks safely instead of overwhelming them with fear.
- Respect children's evolving autonomy: introduce gradual decision-making and informed digital choices.
- Consider the long-term effects: introduce new devices and platforms mindfully, ensuring they align with a child's developmental needs.

By addressing these ethical concerns thoughtfully, families and educators can create a supportive, informed, and balanced digital environment for young children.

8. Strategies, approaches and techniques to engage with young children

Engaging young children (under 8 years old) in digital literacy and online safety education requires age-appropriate, playful, and interactive methods that align with their cognitive and emotional development. Since young learners learn best through hands-on experiences, storytelling, and play, educators and caregivers should design activities that are fun, engaging, and developmentally suitable.

Furthermore, one of the biggest challenges in engaging young children (under 8 years old) in digital literacy and online safety education is their short attention span. Young learners, especially those under 6 years old, have limited ability to focus on a single task for long periods—typically between 5 to 15 minutes, depending on their age and interest level. This makes it difficult to introduce complex digital concepts in a way that holds their attention and ensures meaningful learning.

To overcome this challenge, educators and caregivers can:

- Use short, engaging activities: keep lessons brief (10-15 minutes max) and break them into smaller segments with clear goals.
- Incorporate movement and hands-on learning: use action-based activities, like role-playing, clapping games, or digital scavenger hunts, to reinforce key concepts.
- Switch between activities: alternate between storytelling, play-based games, discussions, and screen time, ensuring a balance between active and passive learning.
- Use multi-sensory approaches: engage sight, sound, and touch through puppets, visual aids, interactive digital tools, and songs.

- Encourage participation: ask frequent questions, let children role-play situations, and provide hands-on experiences to maintain engagement.
- Relate digital lessons to real life: connect online safety rules to everyday experiences (e.g., "*Just like we don't talk to strangers on the street, we don't talk to strangers in games*").

To make digital literacy and online safety education engaging and age-appropriate, educators and caregivers can :

- use relatable storytelling to simplify complex topics;
- integrate play-based learning to reinforce positive habits;
- use interactive tools and movement to make learning hands-on;
- encourage discussions and problem-solving to build critical thinking.

By adapting these techniques to fit different learning styles, children can develop strong digital skills in a fun, engaging, and meaningful way.

By designing activities that are short, interactive, varied, and hands-on, young children stay engaged while developing essential digital skills in a way that aligns with their developmental needs.

The sections that follow outline some effective strategies, approaches, and techniques to help children build healthy digital habits, critical thinking skills, and online safety awareness in a way that is meaningful and enjoyable.

8.1 Storytelling: teaching digital concepts through narratives

Why it works:

- Young children connect with characters, emotions, and stories, making storytelling a powerful way to simplify complex digital topics (e.g., online privacy, screen time balance, and cyber safety).
- Stories help children internalise values and see real-world applications of online safety lessons.

How to use it:

- Create digital safety characters: introduce friendly characters like 'Safe Sally' (who asks before clicking), 'Cautious Carl' (who knows about online strangers), or 'Smart Sammy' (who thinks before sharing).
- Use storybooks and picture books: read books that address technology, screen time, or internet safety (e.g., *Chicken Clicking* by Jeanne Willis, *TEK: The Modern Cave Boy* by Patrick McDonnell).
- Role-play digital situations: act out what to do if a pop-up appears, if an online stranger messages you, or if you see something confusing online.
- Encourage children to create their own stories: ask children to draw or write a short story about a character who learns how to use technology safely.

Example activity: *The Tale of Clicky the Curious Cat*

- A story about a cat who clicks on everything without asking and learns to always check with an adult before tapping on links or ads.

8.2 Play-based learning: learning digital literacy through play

Why it works:

- Play is how young children naturally explore the world.
- Using games, puzzles, and pretend play helps children grasp digital concepts in a fun, stress-free way.

How to use it:

- 'Red light, green light' for online safety: show different online situations (e.g., a safe app = green light, a pop-up ad = red light) and let children respond.
- Digital footprint hopscotch – create a paper trail on the floor, with each square representing something you share online (e.g., first name, photo, favourite colour). Children hop along until they reach a 'stop' square (private information).

- Online stranger role-play: pretend to be an online stranger in a game and ask "*What's your name?*". See if children respond correctly by saying no and telling a grown-up.
- Sorting game - safe versus unsafe online choices: give children pictures or statements (e.g., "*Ask a grown-up before downloading*" versus "*Click on random pop-ups*") and let them sort into 'safe' and 'unsafe' categories.

Example activity: *The Secret Code Game*

- Teach children that passwords are like secret codes. Give them a 'secret word' and tell them to only share it with their trusted adult.

8.3 Interactive and hands-on tools: engaging young minds with technology

Why it works:

- Young children learn best when they touch, see, and manipulate objects, making interactive tools highly engaging.

How to use it:

- Digital drawing and storytelling apps: use apps like *Book Creator*, *Toca Life Stories*, or *Draw and Tell* to let children create stories about online safety.
- Simple coding games: platforms like *Scratch* introduce cause-and-effect thinking, helping children understand how digital tools work.
- Smartboard games: use interactive whiteboards or printable board games where children make choices about online safety and digital habits.
- Augmented reality (AR) explorations: apps like *Quiver* allow children to interact with digital objects in a real-world setting.

Example activity: *Tap or Stop? interactive board game*

- A teacher presents different online situations (e.g., a pop-up, an unknown friend request, a learning game), and children tap or say "*Stop*" based on whether it's safe or unsafe.

8.4 Music and movement: learning digital literacy through songs and actions

Why it works:

- Music helps memory retention, and movement keeps children engaged.

How to use it:

- Sing digital safety songs: make up songs about password safety, screen time limits, or safe searching (e.g., "*Ask before you click*" to the tune of a nursery rhyme).
- Act out internet safety rules: play a freeze dance game where children freeze when they hear "*Stop, close, tell.*"
- Make digital well-being routines fun: use clapping rhythms to signal when it's time for a screen break.

Example activity: *The Screen Time Boogie*

- A dance where kids follow moves based on screen time habits (e.g., "*Hop like a bunny if you take screen breaks*", "*Spin if you play outside*", "*Freeze if you've used a screen for too long*").

8.5 Question and discussion-based learning: encouraging critical thinking

Why it works:

- Encourages problem-solving, decision-making, and real-world application of online safety lessons.

How to use it:

- Ask open-ended questions: "*What would you do if a game asked for your name?*"
- Encourage "*What if…?*" scenarios: "*What if you see a video that makes you sad? What if someone online asks for a picture?*"

- Use a talking stick for group discussions: children take turns sharing their ideas on staying safe online.

Example activity: *Tech Talk Circle*

- Children sit in a circle and pass a toy while answering digital safety questions like, "*What's a safe password?*"

Part IV: Engaging with parents, caregivers and educators

9. Challenges of engaging with parents, caregivers and educators in developing young children's digital literacy and online safety skills and how to overcome them

Developing digital literacy and online safety skills in young children (ages 0–8) requires the active involvement of both parents/caregivers and educators. However, engaging them effectively comes with several challenges, including lack of awareness, time constraints, technological gaps, and differing views on screen use. Overcoming these barriers is essential to ensure that children receive consistent guidance at home and in school, fostering safe, responsible, and balanced digital habits from an early age.

Additionally, cultural differences can significantly influence how families and educators approach digital literacy and online safety for young children. Parents, caregivers and teachers from different cultural backgrounds may have varying attitudes, priorities, and levels of awareness when it comes to screen time, internet safety, and digital education. These cultural gaps can create challenges in ensuring that all children receive consistent and developmentally appropriate guidance in navigating the digital world.

This section outlines the main challenges and proposes ways to address them in building trust and awareness while empowering parents, caregivers, teachers and educators to model safe and responsible online behaviour.

9.1 Lack of awareness and confidence in teaching digital literacy

Many parents, caregivers and educators do not feel confident in their ability to teach digital literacy because they lack knowledge about online risks, privacy

settings, and child-friendly digital resources. Some believe that online safety is only relevant for older children, delaying early education on these crucial skills.

How to overcome it:

- Provide accessible training: schools, community centres, and online platforms can offer simple, practical workshops for parents and educators on internet safety, digital well-being, and privacy settings. Consider also offering professional training in workplaces.
- Use parent-friendly guides and checklists: offer short, easy-to-understand resources (e.g., step-by-step guides on setting up parental controls, tips on choosing safe apps).
- Normalise digital conversations: encourage parents and teachers to talk openly with children about their digital experiences, treating technology as part of everyday learning. Invite parents and teachers to integrate questions such as "*What have you done online today?*", "*Was it fun?*", "*Show me*" in the daily routine of the family, community, or class.
- Make learning a joint experience: encourage parents and teachers to learn alongside children, discovering new apps and platforms together.

Example: organise a 'family or community digital literacy day' where parents/caregivers and children explore safe apps and learn online safety rules together.

9.2 Time constraints and competing priorities

Both parents/caregivers and teachers often have busy schedules, making it difficult to dedicate time to teaching digital literacy and online safety. Parents may be juggling work, household responsibilities, and childcare, while teachers have to balance multiple subjects within a limited school day.

How to overcome it:

- Integrate digital literacy into daily routines: parents/caregivers can turn everyday moments into learning opportunities (e.g., discussing safe internet use while watching YouTube or playing games together).
- Embed online safety in school lessons: instead of teaching digital literacy as a separate topic, incorporate it into subjects like reading, storytelling, and creative play.
- Use micro-learning techniques: provide short, bite-sized lessons (5–10 minutes) that fit into busy schedules.
- Offer on-demand resources: create pre-recorded webinars, podcasts, or quick tip sheets that parents/caregivers and teachers can access at their convenience.

Example: schools can consider sending a weekly 'Digital tip of the week' email to parents with one quick online safety tip. Create a collection of those tips on a dedicated repository/webpage. You can complement it with a forum if you can set up efficient content moderation.

9.3 Differing views on screen time and digital device use

Parents/caregivers and teachers often have different perspectives on screen time—some believe in strict limits, while others see digital devices as valuable learning tools. This can lead to inconsistencies between home and school, making it harder for children to develop balanced digital habits.

How to overcome it:

- Promote screen time quality over quantity: shift the focus from how much time children spend on screens to what they are doing online. Encourage interactive, educational, and creative screen use over passive content consumption.

- Create a shared digital agreement: schools can work with families to develop consistent guidelines on screen time, device use, and online safety expectations.[43]
- Educate about digital well-being: help parents/caregivers and teachers understand that not all screen time is bad. When used appropriately, technology can support creativity, problem-solving, and learning.
- Provide personalised recommendations: share customised screen time strategies based on a child's age, interests, and needs.

Example: schools can consider sending a digital habits guide to parents outlining age-appropriate screen time recommendations and suggested educational apps.

9.4 Limited access to technology and digital resources

Not all families, communities and schools have equal access to digital devices, fast internet, or high-quality educational content. Children in low-income households or underfunded schools may miss out on early digital learning opportunities, widening the digital divide.

How to overcome it:

- Advocate for affordable internet and devices: schools and community organisations can partner with local businesses, libraries, and government programmes to provide affordable or free access to technology.
- Encourage public library and community centre use: parents and educators can direct families to free digital literacy programmes at libraries or after-school programmes.
- Prioritise offline digital literacy activities: not all digital literacy lessons require a device—schools can teach online safety, privacy, and digital decision-making through storytelling, role-play, and board games.

[43] The Digital Pact of the City of Milan is an example of a systemic coherent approach involving schools, educative institutions and families at the level of the city. https://www.benesseredigitale.eu/i-progetti/patto-educativo-digitale-della-citta-di-milano/.

- Create low-tech solutions: provide printable guides and offline activities for families with limited access to digital tools.

Example: schools can distribute 'Digital literacy at home' activity sheets with offline discussions and role-playing exercises on online safety.

9.5 Resistance to change and fear of technology

Some parents and educators hesitate to embrace digital tools due to fear of online risks, lack of personal tech skills, or concerns about overexposure to screens. Others may view technology as unnecessary for young children.

How to overcome it:

- Provide reassurance and education: address concerns by explaining that early digital literacy is not about excessive screen time but about preparing children for safe, responsible tech use.
- Use familiar learning methods: combine traditional teaching methods (e.g., books, hands-on play) with digital learning to make the transition smoother.
- Highlight real-world benefits: show how digital skills help children with problem-solving, creativity, and future career readiness.
- Offer peer support and success stories: schools can organise parent discussion groups where caregivers share their experiences with introducing digital literacy in positive ways.

Example: Host a 'Parent, caregivers and teacher digital coffee chat' where families can share concerns, experiences, and tips about guiding young children online.

9.6 Differences in parental attitudes toward digital technology

In some families, digital technology is viewed as an essential learning tool, while in others, it is seen as a distraction or even a danger for young children, and in many a bit of both. Parenting style depends on how much parents support or restrict the use of digital technology by their children and how much they discuss or impose

rules.[44] Research has categorised parenting strategies into four categories: permissive, authoritative, authoritarian and laissez-faire, depending on the level of rules and support they adopt. The context, parents' knowledge and time availability matter as well.[45]

Permissive	Authoritative	Authoritarian	Laissez-faire
Parents do not set explicit limits but monitor occasionally and negotiate with the children; rarely guiding or teaching, but rather reacting to solicitations from the children.	Parents set clear rules and explain them in order to foster responsible behaviour and self-regulation. The most common rule is setting a specific amount of time for using digital media, but they may also consider content and context.	Parents set rules without explanations and expect obedience. They are not open to dialogue and impose their own perceptions and views towards digital media.	Parents do not control or engage with their children's digital practices; they do not interfere at all.

[44] Valcke, M., Bontea, S., de Wevera, B., & Rotsa, I. (2010). Internet parenting styles and the impact on internet use of primary school children. Computers & Education, 55(2), p. 454-464.

[45] Chaudron, S., Di Gioia, R., Gemo, M.(2028) Young children (0-8) and digital technology, a qualitative study across Europe; EUR 29070; doi:10.2760/294383.

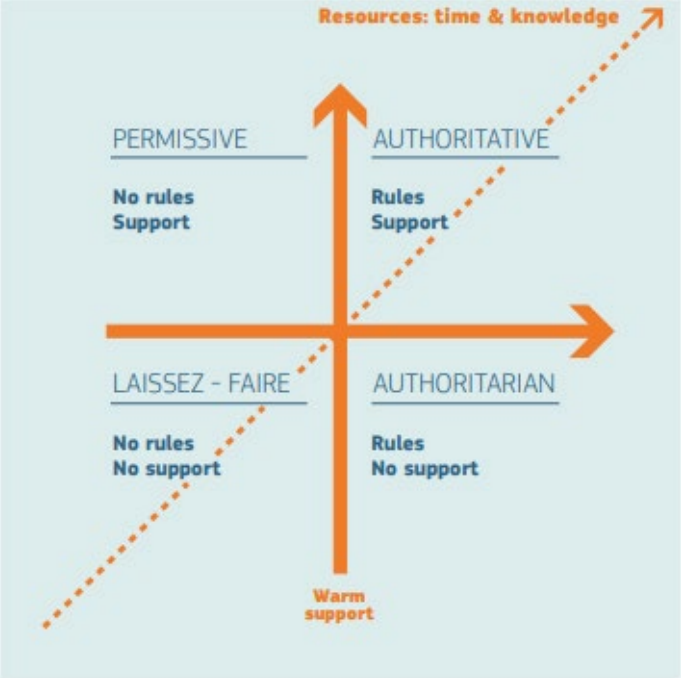

Figure 2: The relations between parenting style and mediation strategies as categorised by Valcke et al. (2010) and parents' availability of time and knowledge as resources
(Source: European Commission. Chaudron, S., Di Gioia, R., and Gemo, M. (2018). ***Young children (0-8) and digital technology: a qualitative study across Europe****, p51)*

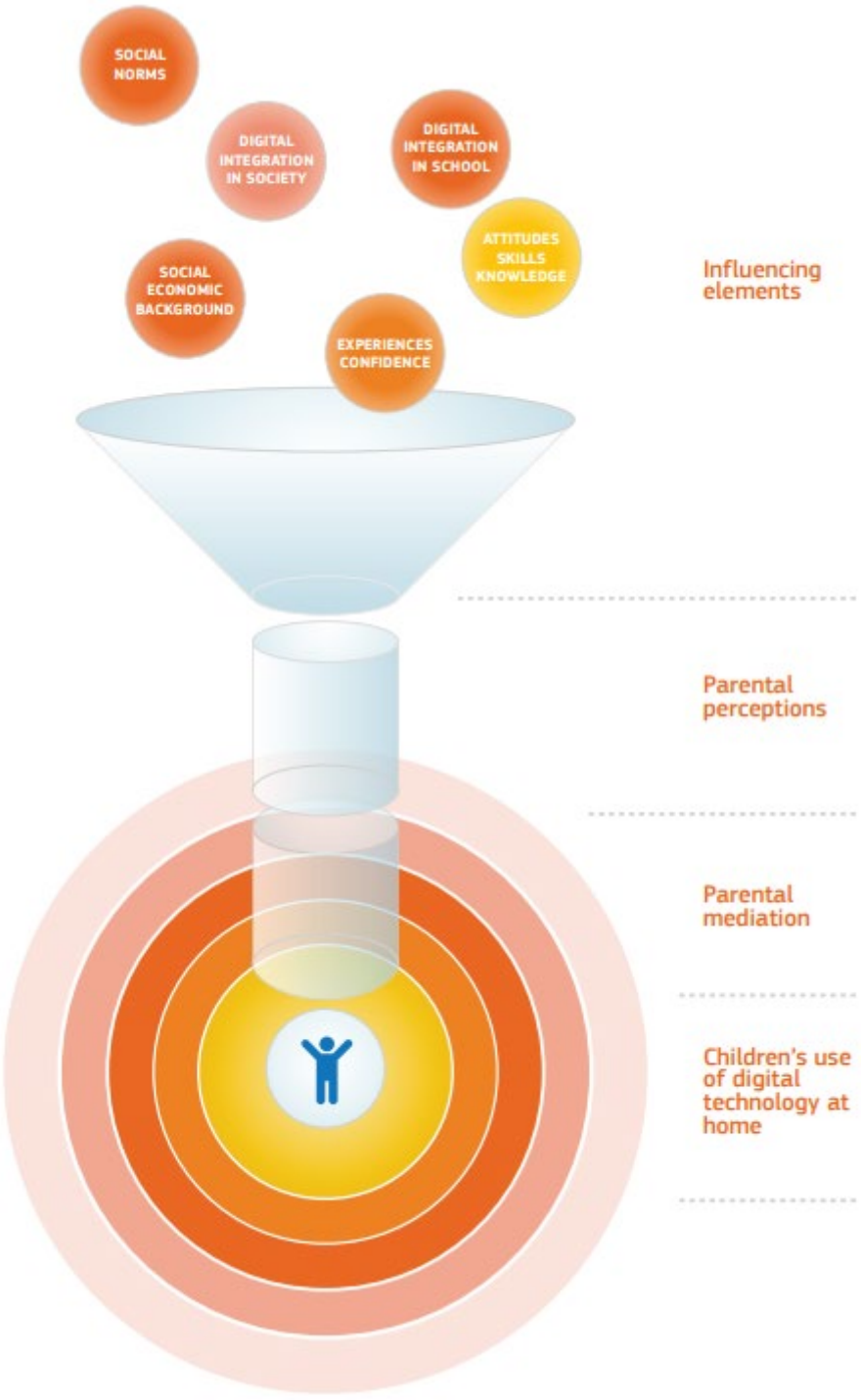

*Figure 3: Influencing elements of parental perceptions towards digital technology, key to parental mediation strategies and therefore to children's use of digital technology in the home context (Source: European Commission. Chaudron, S., Di Gioia, R., and Gemo, M. (2018). **Young children (0-8) and digital technology: a qualitative study across Europe**, p52*

How to overcome it:

- Promote a balanced view; teach parents and educators that not all screen time is harmful and that quality, supervised digital activities can support learning.
- Provide culturally inclusive resources: develop customised digital literacy guides that address cultural concerns while highlighting safe, age-appropriate digital benefits.
- Encourage open conversations: schools and community organisations can create discussion spaces where families can share concerns and perspectives on digital education.

Example: a school with a diverse community can host a 'Technology and culture roundtable' where families discuss how digital tools fit into their cultural values.

9.7 Varying levels of trust in online platforms and institutions

Some cultural communities lack trust in online platforms, government policies, or schools regarding children's digital data privacy. Parents may be hesitant to allow their child to engage with online learning tools due to concerns over data collection, surveillance, or exposure to inappropriate content.

How to overcome it:

- Be transparent about digital privacy: educators should clearly explain how children's data is protected in digital learning environments.
- Empower parents with control: offer step-by-step guides on how parents can manage privacy settings and parental controls.
- Build trust through local community leaders: work with culturally respected figures (e.g., faith leaders, community elders) to promote safe digital learning practices.

Example: schools can provide translated resources that explain how educational apps collect and protect data in simple, non-technical language.

9.8 Language barriers in digital literacy resources

Many online safety and digital literacy resources are only available in dominant languages (e.g., English, French, Spanish), making it difficult for non-native speakers to access guidance on safe digital habits for their children.

How to overcome it:

- Translate key online safety resources: ensure that digital literacy guides, parental control instructions, and safety tips are available in multiple languages.
- Use visual and video-based learning: provide infographics, animations, and multilingual videos that explain online safety in non-verbal or simple ways.
- Encourage peer support networks: establish parent mentorship programmes, where bilingual parents help translate and explain digital literacy concepts to other families.

Example: schools can create multilingual 'Safe digital habits' posters and distribute them to families in their home language.

9.9 Socioeconomic and digital access inequalities between cultural communities

In some cultural and immigrant communities, limited financial resources and unequal access to technology mean that children may not have the same opportunities to develop digital literacy skills.

- Some children lack access to devices or the internet at home, making it difficult to practice online safety skills.
- Some parents prioritise basic needs over digital education, leading to delayed digital literacy development.

How to overcome it:

- Provide low-tech digital literacy alternatives: offer offline activities (e.g., storybooks about online safety, role-playing exercises).

- Increase public access to technology: partner with libraries, community centres, and local organisations to provide free or low-cost internet and devices.
- Advocate for affordable internet and digital inclusion: support government initiatives that bridge the digital divide in underserved communities.

Example: schools can set up 'Tech lending programmes' where families can borrow tablets or laptops for educational use.

9.10 Cultural beliefs about child autonomy and technology use

Different cultures have varying expectations about when and how children should be allowed to use technology independently.

- Cultures that promote early independence: some families may encourage children as young as 5 or 6 to explore digital spaces alone, believing it fosters self-reliance.
- Cultures that prioritise parental control: other families may delay giving children digital access until they are much older, limiting early exposure to online risks and digital skills.

How to overcome it:

- Respect cultural perspectives while encouraging safe exploration: offer gradual digital literacy approaches that align with cultural values (e.g., guided independence strategies).
- Encourage co-use between parents and children: teach families that shared digital activities (e.g., watching educational videos together) can support both supervision and skill-building.
- Provide flexible digital safety plans: create customisable digital literacy roadmaps that allow families to adapt safety rules based on their child's maturity level.

Example: schools can create 'Family digital use agreements' where parents decide age-appropriate device rules based on their cultural values.

10. Conclusion: Creating a collaborative approach to develop early digital literacy and online safety skills

Ensuring that young children (ages 0–8) develop early digital literacy and online safety skills is essential in today's increasingly digital world. As technology becomes more integrated into daily life, children must learn how to navigate digital environments safely, responsibly, and confidently from an early age. This Good practice guide has provided practical strategies, engaging methods, and developmentally appropriate approaches to help parents, educators, and caregivers reach and engage young learners in meaningful digital education.

By adopting play-based learning, storytelling, hands-on activities, and interactive tools, adults can make digital literacy education accessible, fun, and age-appropriate. At the same time, fostering open conversations, setting clear boundaries, and modelling healthy digital habits ensures that children develop a balanced, safe, and informed relationship with technology.

To achieve this, collaboration is key. Parents, caregivers, educators, and Safer Internet Centres must work together to create a supportive digital learning environment that respects each child's developmental stage, cultural background, and individual needs. By implementing the best practices outlined in this guide, we can empower children not only to avoid online risks but to embrace technology as a tool for learning, creativity, and positive social interaction.

To successfully engage parents and educators in developing young children's digital literacy and online safety skills, it is essential to:

- increase awareness and confidence through accessible resources and workshops;
- make digital learning fit into busy schedules with micro-learning and easy-to-use tools;
- find common ground on screen time by focusing on quality, not just quantity;

- close the digital divide by advocating for tech access and providing offline learning options;
- reduce fear and resistance by promoting balanced, developmentally appropriate approaches.

By working together, parents, caregivers, educators, teachers and communities can create a supportive, consistent digital learning environment that helps children develop healthy, informed, and responsible digital habits from an early age.

- Acknowledge cultural differences in attitudes toward technology.
- Provide culturally inclusive, multilingual, and accessible digital resources.
- Respect diverse parenting styles while promoting digital safety awareness.
- Bridge the digital divide by ensuring all children have access to safe, educational technology.
- Encourage community-led discussions on how digital learning fits into different cultural values.

By creating inclusive, culturally sensitive digital literacy programmes, we can ensure that all children—regardless of background—receive the support they need to navigate the digital world safely and effectively.

Ultimately, investing in early digital literacy lays the foundation for lifelong digital citizenship, equipping children with the skills and confidence they need to thrive in a digital world while staying protected. Together, we can ensure that every child, regardless of background, has access to the knowledge and support needed to navigate the digital age safely and meaningfully.

Annex 1: Resources

European data

Digital Literacy in the EU: An Overview
Provides an overview of digital literacy levels across EU member states.

Digital Skills Indicator 2.0: Measuring Digital Skills Across the EU
A framework for assessing digital competence levels across different demographics in the EU.

Digital literacy resources

How the Internet Really Works – Comic Book
A child-friendly illustrated guide explaining internet infrastructure, security, and privacy.

How the Internet Works for Kids
An introductory book helping children understand how the internet functions.

Council of Europe

Digital Citizenship Education (DCE)
A programme designed to equip young citizens with the values, attitudes, skills, and knowledge needed to participate fully and responsibly in society.

Digital Citizenship Education Handbook
Presents the three pillars of digital citizenship education: being online, well-being online, and rights online. Includes practical guidelines and activity sheets for educators and parents. Available in English and German.

Digi-Nauts - Educators' Guide
A video series for young children, parents, and educators about digital citizenship. Each episode is accompanied by activities to reinforce key messages.

DCE for Educators
The *Being a Child in the Age of Technology* guide provides learning goals and classroom activities to help educators integrate digital citizenship education.

European Year of Digital Citizenship Education 2025
An initiative encouraging EU Member States to set common goals and develop policies for digital citizenship education.

LEGO®

LEGO® Digital Security
Educational materials developed by LEGO to teach online safety concepts in a child-friendly way. Available in multiple languages.

Internet Matters

Internet Matters
Since 2014, Internet Matters has provided information and advice to parents and caregivers to help children navigate the digital world safely. Resources are available in Arabic, Chinese, Dutch, French, German, Hindi, Italian, Portuguese, Russian, Spanish, and Welsh.

Digital Resilience Toolkit
Guidance on helping children build resilience against online risks.

Children's Tech Guide
An expert-approved guide to age-appropriate technology for children.

Power of Zero

Power of Zero
A global initiative promoting safe online habits for young children, focusing on kindness, inclusivity, and respect in the digital world.

First Device Family Toolkit
Resources for families to introduce digital skills to young children.

Superpowers Classroom Programme
A social-emotional learning programme that teaches 12 essential life skills for navigating online and offline experiences.

No Bully Programme
An initiative to foster empathic communication from a young age.

Digital parenting resources

- Better Internet for Kids: Learning Corner - Parents and caregivers

- UNICEF Parenting

Expert-backed tips, insights, and facts to support parents in digital safety.

- UNICEF How to Keep Your Child Safe Online

Guidance on ensuring safe online experiences for children.

Educational resources

- Childnet – Educational Resources

- Childnet Digiduck Stories

- SWGFL – Inclusive Digital Safety

- klicksafe

- Better Internet for Kids: Learning corner: Teachers and educators

- Project Evolve UK

- Google Be Internet Legends

- KID_Actions Educational Toolkit

- ISPCC Shield Anti-Bullying Programme

- SELMA Hacking Hate

- The School of Social Networks

Research and reports

Online safety and digital risks reports

National Survey of Children, their Parents and Adults Regarding Online Safety
A government study exploring how children and parents engage with online safety.

Recommending Toxicity – TikTok & YouTube Shorts
A research study on the impact of social media algorithms on boys and young men.

CO:RE Knowledge Hub
A European knowledge hub providing research and insights on children's digital experiences.

DigiLitEY
A research network (2015–2019) that studied digital literacy in children from birth to age 8 across 36 countries.

DigiLitEY Publications
A collection of reports and findings on early childhood digital literacy.

Smartphone policies and school debates

Does the Evidence Support a School Ban on Smartphones?

5Rights Foundation – Smartphone Policies in Schools: What Does the Evidence say?

LSE – Parenting for a Digital Future

Country-based resources

Austria

Safer Internet Austria – Kindergarten resources
A collection of materials designed for early childhood education, including a

storytelling resource for reading aloud to young children, and drawing activities and creative exercises to introduce basic digital literacy concepts.

Safer Internet Austria – Teaching resources

A collection of lesson plans and activities tailored for primary school educators.

Safer Internet Austria – Online Safety Brochure for Educators

A detailed guide on teaching digital literacy and online safety in primary schools.

The Online Zoo (ISPA Austria)

A picture book available in multiple languages, accompanied by educational videos that teach young children about safe internet use through storytelling.

Safer Internet Austria – Media Education in Primary School

Guidelines and resources for integrating digital literacy education into primary school curricula.

Additional Primary School Teaching Material

Includes interactive exercises and practical worksheets to reinforce online safety concepts.

Sheeplive YouTube Playlist

An older but still relevant animated series that teaches young children about online safety, privacy, and responsible digital behaviour through engaging stories.

Czech Republic

Children's Crisis Centre – Ditekrize.cz

Provides colouring books and comic books to introduce cybersafety topics to young children.

Cyberspace Colouring Books for Children

Comics on Cyberspace – 4 volumes

- https://www.ditekrize.cz/app/uploads/2022/08/1.pdf

- https://www.ditekrize.cz/app/uploads/2022/08/x-1.pdf
- https://www.ditekrize.cz/app/uploads/2022/08/x-2.pdf
- https://www.ditekrize.cz/app/uploads/2022/08/x-3.pdf

🔗 Cyber Fairy Tales by Cybersecurity Centre
A collection of modern fairy tales designed to teach young children about cybersecurity and responsible online behaviour.

🔗 ON-LINE ZOO resource
A comprehensive educational package designed to teach online safety through engaging materials. The resource includes:

- Storybook and poetry book: introducing digital safety concepts through storytelling.
- Activity sheets and colouring books: interactive materials to reinforce online safety lessons.
- Teacher's guide: providing educators with structured lessons.
- 3D models: designed for visually impaired children to engage with the characters.
- Audiobook: making the content accessible to a wider audience.

🔗 Utržené Sluchátko
A child-friendly podcast created by Linka Bezpečí (a member of the Czech Safer Internet Centre consortium and a helpline). It features peer-to-peer discussions on online safety topics.

🔗 Children's TV series on digital literacy

- 🔗 Datová Lhota (Czech Television): a children's TV series introducing basic internet safety concepts.
- 🔗 Alice in Wonderland of GIFs (Czech Television): a series exploring digital culture, suitable for slightly older children.

🔗 Short film on cyberbullying and social exclusion

- Ostracization Story (JSNS): a short film addressing social exclusion and online behaviour for children aged 8–12.

Denmark

De første digitale skridt (The First Digital Steps)
A comprehensive project developed by the Danish Awareness Centre in 2022 to support parents and professionals working with children aged 0–6. The project provides research-based guidance and practical activities to introduce young children to safe and responsible digital use. The project components include:

- flyer for parents: a concise guide offering practical advice on early digital habits;
- research report: the foundational study behind the project, exploring early childhood digital engagement;
- activity resources: a collection of interactive exercises designed for kindergartens and home settings;
- explainer videos: short, informative videos to help parents and educators understand key concepts;
- promotional materials: including a poster and roll-up for awareness campaigns.

France

e-Enfance
A French association raising awareness among children, parents, and professionals on cyberbullying and digital usage. It provides various resources like À quel âge devons-nous offrir un portable à notre enfant?

OPEN - Observatoire de la Parentalité & de l'Éducation Numérique
An observatory conducting studies on family and children's digital practices.

- Studies repository
  OPEN regularly publishes studies on digital practices among families, adolescents, and children.

- Parents, Enfants & Numérique 2024 – Rapport de l'étude
  This quantitative survey compares the perceptions of parents and children to track the evolution of digital usage and parental support strategies.
- Livre Blanc – OPEN 2024
  Second edition of a White Paper providing an in-depth analysis of family digital practices, including expert insights and advice from various specialties.

🔗 Pix Parents
Pix is a digital skills training and certification platform, aligned with the CRCN (Cadre de Référence des Compétences Numériques), which is based on DigComp (the European Digital Competence Framework). Part of the Pix ecosystem, this resource is designed to guide parents in developing essential digital skills to better support their children. It includes nine thematic modules on topics such as cyberbullying, parental controls, video games, and screen time management.

🔗 CLEMI – Digital Parenting
CLEMI provides educational resources for families to help parents navigate digital literacy and media education for their children.

🔗 ARCOM – Digital Citizenship Educational Kit
A comprehensive kit providing digital citizenship education materials for parents and teachers.

🔗 CNIL – Protecting Children's Privacy Online
A parental guide on how to protect children's privacy and personal data online.

🔗 Je protège mon enfant – Official government website
A dedicated platform curating resources from various organisations to support parents in managing children's screen time and online safety.

🔗 French Government Report on Screen Time and Children (April 2024)
A recent report by the Commission Écrans addressing the impact of screen time on children and best practices for digital parenting.

🔗 Primàbord – Digital Use in Preschool (Ages 3–6)
A government initiative identifying best practices for integrating digital tools into early childhood education.

Greece

We Are Not Alone (watch on YouTube)
An educational video raising awareness about online safety and responsible digital behaviour for young children.

True or Lie? (watch on YouTube)
A short video helping children differentiate between real and fake information online.

Safer Internet Day (SID) resources
A collection of Safer Internet Day (SID) educational materials, designed to help young children learn about online safety in an engaging and age-appropriate way.

- SID 2025 – Resources for young children
- SID 2024 – Educational materials
- SID 2023 – Educational materials

Annual back-to-school safety packs
These back-to-school resources include lesson plans, activity sheets, and safety guidelines to support educators and parents in introducing digital literacy topics at the start of the school year.

- 2024 edition
- 2023 edition
- 2022 edition
- 2021 edition
- 2020 edition

Finland

Save the Children Finland - Child Sexual Abuse Prevention and Education Project (2022–2024)
A project developed to support children (0–8 years old), parents, caregivers, and educators in addressing child safety, sexual education, and abuse prevention.

Resources are available in multiple languages. Key resources for young children and professionals include:

- Listen and Support: Guide for Parents and Guardians
  A resource helping parents and caregivers provide age-appropriate sexual education and discuss safe boundaries with children.
- Training Package: Evidence-Based Sexual Education
  A structured training module for educators and professionals working with young children.
- Bingo: Body Parts
  A fun and interactive educational game to teach children about body awareness and boundaries in an age-appropriate way.
- Brochure for Children: Five Things You Should Know About Being Safe and Healthy
  A child-friendly guide covering essential safety principles in a simple and engaging format.

Ireland

Webwise Parents Hub
A comprehensive resource for parents, including advice videos, talking points, app explainers, and step-by-step 'How To' guides to support children's online safety.

Webwise Parent Guide for a Better Internet
A practical booklet providing key insights and strategies for creating a safer online environment for children.

#TalkListenLearn Topic Generator
An interactive tool designed to help parents start important conversations about online safety with their children.

#TalkListenLearn Talking Points for Parents
A structured discussion guide to assist parents in addressing digital challenges and opportunities with their children.

National Parents Council Primary
A hub for training and resources to help parents support safe and responsible digital use.

ISPCC Digital Ready Hub
A resource providing practical advice and tools for parents to help children navigate the digital world safely.

Educational resources for schools

MySelfie and the Wider World (5th & 6th Class)
A teaching resource for older primary school students, focusing on self-expression and responsible online behaviour.

HTML Heroes (1st & 2nd Class)
HTML Heroes (3rd & 4th Class)
Interactive resources that introduce young children to digital literacy, privacy, and safe online habits.

Be Kind Online – Garda Schools Programme (3rd & 4th Class)
An initiative promoting online kindness and cyberbullying awareness.

Safer Internet Day Primary Presentations
Lesson plans and presentations designed for Safer Internet Day (SID) activities.

FUSE Anti-Bullying and Online Safety Primary Programme
A school-based programme addressing cyberbullying and online safety.

MediaWise Safefood Programme
A media literacy initiative focused on advertising and healthy food choices for children.

BEAT Digital Media Literacy Series
A podcast series exploring digital media literacy topics for young learners.

ADAPT Centre – Technology in My Life
A project helping children understand the impact of technology on their daily lives.

Foróige Connect Safely Programme
A programme designed to teach safe and responsible digital engagement to young people.

Trend Micro Cyber Academy
An interactive platform for teaching children about cybersecurity and online privacy.

HSE Ireland – Screen Time Guidance
Official health recommendations for managing screen time for young children.

Digital Citizenship Map
A map gathering initiatives that promote digital citizenship and serve as inspiration for decision makers and active citizens in Europe.

Toolkit for Including Children (0–5) in Decision-Making
A guide for professionals and caregivers on how to involve young children in decision-making.

Italy

Generazione Connesse – Educating for Digital Awareness
A guide designed for both teachers and parents, as digital challenges and children's rights in the connected world are a shared responsibility of the entire community.

Benessere Digitale
A research centre focused on digital well-being and parenting offers resources like Sportello del Tutor Digitale: un modello di benessere digitale per le famiglie (a platform of information regarding digital parenting).

Patto Educativo Digitale della città di Milano
A coherent approach, at a local scale, between families and schools to digital education.

Portugal

SeguraNet
A Portuguese initiative promoting digital citizenship education.

Media Smart Portugal
A media literacy programme teaching children (7–14) to critically analyse advertising.

United Kingdom

Childnet
A UK-based organisation providing resources, guidance, and activities to help children, parents, and educators promote safe and positive online experiences.

- Smartie the Penguin
- Hanni and the Magic Window
- On the internet (a learning to read book)
- The Digiduck Series (also translated into Greek and a handful of other languages)
- The SMART video lessons (originally created for use with 6–9-year-olds, so top end of your age bracket)
- Keeping Under 5s Safe Online (advice for parents and caregivers)
- Back to School Assemblies (the younger one is pitched at 3-7s)

Some of the following resources also target children aged 3 to 7:

- Youth Voice in Online Safety Toolkit
- All Fun and Games?

Parent resources

Parent Zone UK
Childnet UK – Parents and carers
NSPCC UK – Support for parents

Australia

eSafety Commissioner
An independent regulator addressing online risks, cyberbullying, and harmful content.

eSafety Kids
A platform providing age-appropriate online safety education for children.

Online Safety for Under 5s Booklet

better-internet-for-kids.europa.eu

@Insafenetwork
@safeinternetday

facebook.com/saferinternet
facebook.com/SaferInternetDay

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