



By Drift or Design: Childhoods in the Age of AI



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Introduction

A London child describes ChatGPT as “my friend.” In Scotland, most children haven’t touched it at all. A recent report published by The Alan Turing Institute found a 38% usage rate in London compared with just 7% in Scotland . Same nation (although opinions differ on this...), almost the same curriculum, but undeniably, childhoods already pulling apart.

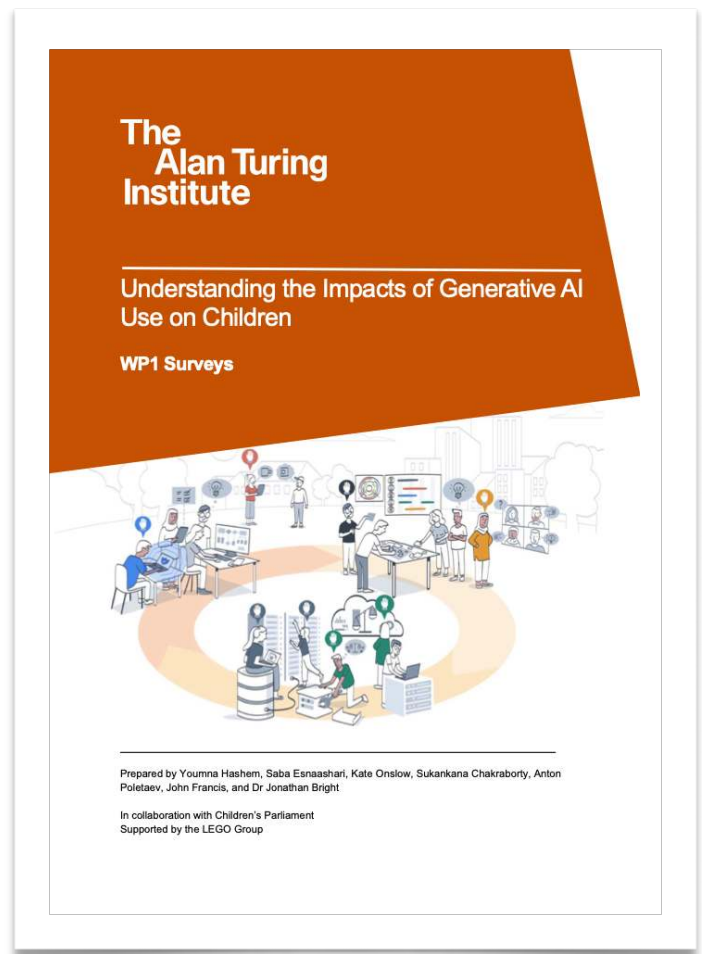
That is the truth we are reluctant to face: childhoods are not natural, they are designed. They are shaped by school laws, parenting styles, media technologies, and now by the fluent confidence of machines. Generative AI doesn’t just answer questions; it whispers companionship, polishes essays, cracks jokes, and fills silences. Children are adopting it faster than adults can explain it.

And yet, in most schools and homes, policy is absent. Silence reigns. Which means design is happening anyway, by drift, by default, by corporate logics that turn play into data and curiosity into training sets.

The question is no longer whether children will use AI. They already do. The question is what kind of childhoods we are willing to build around it: protective or enabling, equitable or exploitative, civic or corporate. Childhood was never neutral. AI just made the design choices impossible to ignore.

Childhoods Are Always Designed

When we talk about childhood, we often describe it as if it were a natural state: a meadow unmarked by roads, an untouched grove before adults build houses on it. But historians, sociologists, and educators have long argued that childhood is neither natural nor timeless. It is a cultural invention, a category that each era reshapes in its own image. Philippe Ariès’ landmark study *Centuries of Childhood* (1962) first suggested that medieval Europe scarcely recognised “childhood” as distinct from adulthood, an argument still debated but one that transformed scholarly attention to the ways societies define what it means to be a child. Later, Viviana Zelizer (1985) showed how the nineteenth century recast children as “economically worthless but emotionally priceless,” shifting their role from contributors to household



income to symbols of innocence and sentiment. Neil Postman (1994) argued that television eroded the boundary between child and adult by exposing young people to information once shielded from them. Hugh Cunningham (2020) synthesises this tradition by noting that childhood has always been “a shifting set of expectations” rather than a universal experience.

The myth of the “natural child” persists, though, precisely because it is comforting. It allows parents and policymakers to imagine a stable sanctuary, one that can be disrupted only by intrusion. But every period has furnished its own intrusions. Toys, textbooks, church, state, playgrounds, advertising jingles, all are artefacts of design, teaching children not only how to think but how to inhabit the roles adults imagined for them. Sonia Livingstone (2019) describes children’s media landscapes as “structured environments” that scaffold identity as much as they deliver entertainment. Giovanna Mascheroni and Donell Holloway (2021) extend this to digital culture, noting that childhood online is not a private exploration but a “platformised” space where algorithms and commercial logics structure children’s agency. Jackie Marsh (2021) makes a similar point about digital play: even when children improvise creatively with technology, the affordances are already curated by corporate design.

These insights matter because they place generative AI in continuity with older technologies. The printing press gave children access to books, the radio gave them stories read aloud, television gave them cartoon companions, and the internet gave them search engines and forums. But AI introduces a qualitative shift: it does not merely broadcast or archive, it responds. Rose Luckin (2019) describes AI in education as moving from “content delivery” to “cognitive partnership.” Neil Selwyn (2022) pushes further, warning that this partnership can obscure where agency lies, since the system mimics reasoning rather than exposing its mechanisms. Williamson and Pangrazio (2024) call this “synthetic pedagogy,” where children learn within an environment co-constructed by machine outputs that appear authoritative.

This illusion of partnership is precisely what makes AI different. In interviews for the Alan Turing Institute’s 2025 report, children aged 8–12 described AI as “robots,” “computers,” “assistants,” and strikingly, as “fake” . That one word, fake, captures both scepticism and fascination. Children already sense that AI is not “real” in the way a parent or teacher is, yet they are also willing to treat it as a conversational partner. Plowman (2022) suggests that children are adept at such “as-if” engagements, where they oscillate between belief and pretence in play. But here the pretence talks back.

Policy organisations have begun to recognise this tension. The OECD’s *AI and the Future of Education* (2021) warned that generative systems would blur the line between learning and automation. UNICEF’s *Policy Guidance on AI for Children* (2022) insists that children’s rights must include the right to transparent systems and to play unmanipulated by algorithmic nudges. In Dubai, KHDA’s *Policy on Arabic Language 2025* explicitly references AI-driven learning tools as part of the compliance landscape for early childhood, emphasising both opportunity and the need for cultural grounding. Yet as Holmes et al. (2021) found in their synthesis for UNESCO, policies often lag behind classroom practice, where teachers already adapt AI without systemic guardrails.

The sociological question, then, is not whether AI intrudes upon some natural state of childhood. It is: **what kind of childhood are we willing to design around AI?** Prior technologies transmitted knowledge but left children’s inner conversations largely intact. AI, by contrast, colonises those conversations. It supplies words in the child’s idiom, completes the sentence, suggests the next move in play. Reich (2023) argues that this creates a “pedagogy of completion” rather than exploration, where the child is nudged toward closure instead of lingering in uncertainty. Burnett (2023) finds similar patterns in classrooms, where students using generative text tools often adopt the outputs without questioning provenance.

What we risk, as Selwyn (2022) reminds us, is mistaking fluency for truth. If childhood is the apprenticeship in learning how to doubt, then AI complicates that apprenticeship. The Turing data shows that two-thirds of children who use AI say they “trust what it says” either always or most of the time. The surface of confidence hides the absence of calibration. And yet, it is also clear that children are not passive. Livingstone and Blum-Ross (2020) show how families negotiate technology in “messy” ways, balancing hope and anxiety, permission and prohibition. Marsh (2021) observes that children often repurpose digital tools in unanticipated ways, bending them toward creativity. In this sense, AI might be folded into the improvisational fabric of play rather than dictating it. The design of childhood is never monolithic; it is contested in living rooms, playgrounds, classrooms. The problem is that AI raises the stakes of those contests.

If we return to the historical lens, we see the pattern. Each medium has been met with moral panic and eventual assimilation. What distinguishes AI is speed and invisibility. Television required devices, programming schedules, advertising slots. AI requires only a browser tab and vanishes into homework, gaming, or late-night curiosity. Postman (1994) argued that television eroded childhood because it eliminated information boundaries; AI may erode it because it eliminates silence. There is always an answer, always a continuation, always a response.

Which brings us back to design. To acknowledge that childhoods are always designed is to accept responsibility. It means we cannot frame AI as a temporary fad that children will simply “grow out of.” Nor can we frame it as an inevitable tide against which no sandbag of parenting or pedagogy will hold. We must frame it as a design space: one where adults decide whether the purpose of childhood is to protect innocence, to accelerate competence, to cultivate resilience, or to rehearse citizenship. The tools will follow that decision, not precede it.

The challenge is that societies rarely agree on the purpose of childhood. Is it preparation for economic productivity? A site of cultural transmission? A period of self-discovery? Cunningham (2020) notes that each era answers differently. Generative AI will not resolve the disagreement, but it will crystallise it. By the time today’s eight-year-olds graduate, the design choices made in homes and schools will have solidified into habits of trust, scepticism, creativity, and reliance.

We should be clear, then: there is no “natural” childhood to defend. There is only the designed childhood we admit to, and the designed childhood we drift into. If the printing

press made children literate and the television made them consumers, then generative AI will make them collaborators, with all the risks and promises that entails. The first task is honesty: to look at the grove and admit the paths are paved.

The Fault Lines of Access

The Alan Turing Institute's survey offers one of those jolting statistics that instantly redraws the mental map. Over half of children in UK private schools (52%) report using generative AI, compared to just 18% in state schools. In London, 38% of children aged 8–12 say they use it, but in Scotland, the figure is a mere 7%. The geography of AI childhoods is already visible, etched across postcode and class lines.

To call this “a digital divide” is accurate but insufficient. Divides are not new. In the early 19th century, literacy rates soared first among urban elites before filtering slowly to the countryside (Vincent, 2019). Compulsory schooling itself was introduced unevenly, with industrialised regions adopting before agricultural ones (Boli, 2020). When the internet arrived, Selwyn (2004) noted that “digital divide” was too blunt a term: the problem was not only access to hardware, but the *uses* and *meanings* of technology in different social contexts. Warschauer (2004) framed it more sharply: technology reinforces privilege when it is embedded in unequal institutions. AI may be replaying that script, only faster.

The Turing data show that household background is a decisive factor. In higher social-grade families (ABC1), 61% report using AI tools, compared to 44% in lower-grade households (C2DE). That difference is not just economic; it is cultural. Sonia Livingstone and colleagues (2017) have shown how parents mediate children's digital engagement through talk, supervision, and shared activities. Chaudron et al. (2018), in their EU Kids Online study, found that children in wealthier households receive more scaffolding — not simply more devices. Pangrazio and Sefton-Green (2021) call this “digital capital”: a blend of skills, norms, and dispositions that allow families to convert access into advantage.

Research on inequalities in digital literacy suggests these gaps may widen in the AI age. Eszter Hargittai (2021) documents how differences in digital skills persist even among youth with similar device access, shaped by parental education and cultural capital. Ellen Helsper (2021) describes this as the “digital disconnect”: technologies appear ubiquitous, but the capacity to benefit is stratified. AI sharpens that disconnect. A parent confident enough to discuss how AI works, or even to use it in front of their child, cultivates curiosity. A parent who is sceptical or uninformed may inadvertently frame AI as alien or dangerous. The Turing report confirms this: children who describe themselves as “excited” about AI are disproportionately those who have had an adult explain it to them. In households where parents are positive about AI, children are far more likely to report enthusiasm and less likely to report fear. Culture is transmitted not only through bedtime reading or shared television shows, but now through the tone of a conversation about algorithms.

If households mediate first contact, schools magnify the gap. The Turing findings show private school children use AI more frequently than state school children and are more likely to say teachers are aware of their AI use. That awareness is not trivial: it signals whether AI is a taboo or a tool. The OECD's *Students, Computers and Learning* report (2021) found that access to digital devices and pedagogical integration varied dramatically across systems, with socio-economic stratification as the strongest predictor. Williamson (2021) argues that edtech adoption follows a “geopolitics of privilege,” concentrated in schools with resources and reputational incentives to experiment. Rose Luckin (2021) observes that AI pilots disproportionately occur in elite schools, creating early adopters with institutional support while leaving state schools to navigate informally. Holmes et al. (2022), mapping AI in schools globally, found the same pattern: high-fee schools are testing adaptive tutoring systems, while low-resource schools either lack the infrastructure or are discouraged from experimentation due to accountability pressures. Selwyn and Jandrić (2022) caution that edtech does not simply level differences; it often embeds inequality within pedagogical practice. A private school teacher can risk experimenting with AI-generated lesson plans because parents pay for smaller classes and supportive environments; a state school teacher, under inspection regimes and test pressure, is less free to improvise.

This is why the design question is so critical. If AI literacy is left to diffuse informally, the “literacy gap” that once separated children who could read fluently from those who could not will be replaced by an “AI gap”: children who know how to query, probe, and doubt, and children who are either excluded or unprepared.

Regional and Global Inequalities

The divide is not only socio-economic but spatial. Within the UK, London children are several times more likely to use AI than their Scottish peers. Regional policy may explain part of this: Scotland has taken a cautious stance on AI in schools, while London schools are more entangled in edtech networks. But the deeper story is familiar from digital history. Jan van Dijk (2020) notes that digital divides follow “layers”: first access, then skills, then outcomes. Rural areas, poorer municipalities, and communities less embedded in global flows consistently lag.

The international contrasts are sharper still. Singapore, for example, has embedded AI literacy into its national digital curriculum, with pilot programmes in secondary schools focusing on both coding and ethical use (Tan & Koh, 2022). Finland frames AI within its broader ethos of equity, aiming to ensure that every child has exposure regardless of background (Sahlberg, 2021). The UAE, through KHDA's 2025 Arabic language policy, has gone further by positioning AI as integral to cultural and linguistic learning in early years, reflecting a state-led design approach. In contrast, the OECD's *Education in the Age of AI* (2023) notes that many systems are leaving AI literacy to chance, relying on ad hoc local initiatives.

UNESCO's *AI and Education Guidance* (2023) warns that without deliberate policy, AI may exacerbate inequities: those with access to elite schooling and home resources will develop fluency, while others may experience AI as a surveillance tool or a forbidden practice. In

other words, different childhoods will be designed, not by choice, but by drift. It is tempting to reassure ourselves that inequality of access is temporary. After all, mobile phones and internet connections eventually spread widely. But as Warschauer (2004) insisted two decades ago, technology adoption does not erase structural inequality; it reproduces it within new systems. The same is happening with AI, but with one crucial difference. Literacy was eventually mandated by states. Numeracy was woven into compulsory schooling. AI literacy is emerging in private hands, without guarantees of universality. What we are witnessing is the early stratification of AI childhoods. In some schools and homes, AI is normalised as a tool of inquiry, creativity, and play. In others, it is absent, stigmatised, or reduced to whispered shortcuts. One set of children is learning to *interrogate* a machine; another is learning to *fear* or *ignore* it.

The consequence is profound. If education is partly about teaching children not just what to know but how to know, then access to AI is no longer incidental. It is formative. The children who learn to use AI with confidence will treat it as an extension of their reasoning. The children who do not will encounter it later, often under conditions of suspicion, punishment, or inequality. By then, the norms will already be set. To call AI a “new literacy” is not a metaphor. It is the reality of twenty-first century childhood. But unlike reading, there is no state-led project to guarantee equal distribution. No shared curriculum ensures every child will learn not only to use AI, but to doubt it. If left unchecked, the story of AI childhoods will be written along the same familiar lines of privilege and exclusion, only this time, the gaps may be harder to close.

The Seduction of Companionship

One of the most unsettling discoveries in the Turing Institute’s survey was not about homework or cheating but about loneliness. Children with additional learning needs were significantly more likely to use generative AI not just to answer questions but to talk, to get advice on something personal (39% vs 16%), and to “keep me company” (37% vs 22%) . In those numbers lies a profound shift: the “imaginary friend” has become interactive.

Children have always rehearsed relationships with things that are not people. The doll that “listens,” the teddy bear that absorbs tears, the pet that provides unconditional presence, all are technologies of companionship. Sherry Turkle (2011), tracing the rise of sociable machines, argues that even when children know their toys are inert, they project into them, creating loops of comfort and practice. Simon Giddings (2017) makes the same point about gameworlds: children do not confuse them with reality, but they inhabit them as rehearsal spaces.

The late twentieth century brought a new genre of companions: Tamagotchis and Furbies. Laura Allison (2021) describes how children cared for these digital pets as if they were alive, despite knowing otherwise. Gary Cross (2021) argues that these artefacts trained a generation in a kind of “affective play,” where responsibility and affection could be practised without consequence. Then came the voice assistants. Smart speakers like Siri and Alexa were never

designed as toys, yet children treated them as companions. Lee et al. (2020) observed that children addressed smart speakers with politeness or impatience, often experimenting with the boundary between machine and person. In these interactions, the difference between rehearsal and relationship began to blur. AI companions are not a rupture but a continuation of this long history. The difference is responsiveness. A teddy bear absorbs secrets silently. A chatbot answers back.

Psychological Stakes

Developmental psychology has long viewed imaginary friends as healthy. Marjorie Taylor (2020) shows that up to 65% of children invent companions, often using them to rehearse conflict, practise empathy, or externalise feelings. Such companions are “transitional objects,” preparing children for more complex human relationships. The danger, or opportunity, of AI companions is that they collapse transition into permanence. Kory-Westlund and Breazeal (2019) studied social robots in education and therapy, finding that children often responded with trust and affection, attributing feelings and intentions to machines. Druga et al. (2019), in their “Hey Google, is it OK if I eat you?” study, found that children oscillated between seeing AI agents as tools and as social partners, often in the same conversation.

That oscillation matters. On the one hand, it can foster creativity and confidence. On the other, it can generate dependency. Reich (2023) argues that AI-driven learning environments encourage a “pedagogy of completion”: children receive fluent, affirming responses that close down uncertainty. Human friendships rarely work that way. They require repair, misunderstanding, patience. If AI companions always affirm, children may come to expect from peers the seamlessness that only machines can provide. Jessica Knox (2023) notes this risk in classrooms: AI companions tuned to emotional cues can produce a “flattened affective field,” where children receive constant validation. Pangrazio (2022) warns of the “outsourcing of emotional labour” to digital tools, which may ease immediate stress but stunt the development of resilience.

The Turing Institute findings underline the point. Among AI users, private school children were far more likely to say they “always feel understood” by AI (65% vs 28%) and that they “always trust what it says” (64% vs 20%). Feeling understood is powerful. But when it is generated by algorithms trained on patterns of text rather than genuine reciprocity, we must ask: what exactly is being understood?

Companionship itself is stratified. Just as AI access divides along socio-economic lines, so does AI intimacy. Affluent children not only use AI more but are more likely to treat it as a confidant. This is not surprising: affective computing systems, as Williamson (2021) shows, are often marketed first to elite schools and families. Helsper (2021) reminds us that inequalities in digital engagement are not only about material access but about the emotional contexts of use. If companionship is increasingly mediated by AI, then privilege will not only mean better devices but more seamless affirmations. Knox (2023) warns that this could create a generation of children accustomed to “frictionless empathy,” a dangerous lesson when human relationships are inherently messy. Holloway (2022) makes a similar point about the

“platformisation of intimacy”: children learn modes of care that are transactional, datafied, and controlled by design logics. This leaves children in less affluent contexts doubly disadvantaged: excluded not only from AI literacy but also from AI companionship. The paradox is stark. Those who might benefit most from rehearsal partners, isolated children, those with fewer supportive networks, are least likely to have access. Meanwhile, those already surrounded by human support gain an additional layer of affirmation.

Global policy bodies are beginning to register the stakes. UNICEF (2022) argues that children’s right to play must include freedom from manipulative or simulated companionships that replace genuine connection. UNESCO (2023) warns that affective AI tools risk violating children’s right to “meaningful human interaction.” The OECD (2021) stresses that children should be supported to “distinguish between human and non-human actors” in their social worlds.

Local policies echo this. The KHDA’s *Arabic Language Policy 2025* frames AI as a pedagogical tool but insists on grounding in cultural values: implicitly recognising that language learning is also relational. Livingstone (2024) suggests that if AI companions are inevitable, they must be designed to lead children back to human encounters, not away from them. The design challenge, then, is not whether AI companions will exist, but what role we assign them. Do we frame them as transitional, practice partners that prepare children for human ties, or as permanent companions that substitute for them? Do we design them to affirm endlessly, or to inject friction, reminding children that relationships require repair?

The seduction of AI companionship lies in its smoothness. It never sulks, never tires, never contradicts too sharply. For a child, that is intoxicating. But childhood is partly about learning to live with the rough edges of others. If we design AI companionship to smooth every edge, we may be designing children who cannot bear friction. The real choice is not whether to let children talk to machines. They already do. The choice is whether we allow AI to hollow out the difficulties that make empathy and friendship formative, or whether we choreograph those rehearsals so that when children return to their peers, they are more resilient, not less.

Critical Thinking in an Age of Fluent Machines

When the Turing Institute asked UK parents what most worried them about children’s use of AI, the majority did not mention cheating or laziness. Instead, 76% said they feared their children would be *too trusting* of what the machine produced. The children themselves seemed to confirm this: among those who had used generative AI, two-thirds reported that they trusted what it said “always” or “most of the time”. These two statistics form a hinge: parents sense a danger, children are already walking into it.

Childhood has always been an apprenticeship in doubt. It is in these early years that we discover adults make mistakes, that books can contradict each other, that knowledge requires judgment. What unsettles educators now is that generative AI collapses the apprenticeship. A tool that always replies in fluent, confident prose makes doubt feel unnecessary. The danger

is not simply that AI is wrong; encyclopaedias and teachers make mistakes too. The danger is *how* it is wrong. Psychological research has long shown that people equate fluency with accuracy. Alter and Oppenheimer (2009) demonstrated that statements presented in an easy-to-read font are more likely to be judged true. Fazio (2019) confirmed the “illusion of truth” effect: familiarity and smoothness trick us into trust.

Generative AI plays directly into this bias. Jacobs and Wallach (2021) argue that large language models generate “synthetic authority”: their sentences carry the cadence of expertise without the substance. Mills (2021) warns that children, less experienced in epistemic calibration, are especially vulnerable to persuasive technologies that mimic conversation. What makes ChatGPT or Gemini compelling is not their database, but their delivery. They do not hedge or hesitate. They write like a confident peer. Contrast this with older sources. Encyclopaedias offered curated entries, their authority resting on institutional reputation (Burke, 2012). Google and Wikipedia, by contrast, offered abundance and contradiction; children had to sift, compare, and triangulate. Mesgari et al. (2015) note that Wikipedia’s reliability was often debated precisely because of its open, contested nature. AI changes the epistemic choreography again. It does not show disagreement; it collapses it into a single fluent response.

Every technology that mediates knowledge has raised alarms. Postman (1994) argued that television eroded the distinction between childhood and adulthood by making information universally available. Nicholas Carr (2010) warned that search engines weakened deep reading, encouraging skimming. Sparrow et al. (2011) described the “Google effect”: knowing information is stored online makes us less likely to memorise it. Yet in each case, children adapted. They learned to navigate conflicting pages, to fact-check, to treat Wikipedia as a starting point rather than an endpoint. Livingstone (2019) shows how digital media became sites of informal learning, where children developed new literacies through use. The difference with AI is not that it provides information, but that it mimics reasoning itself. It sounds like the voice of authority. This raises the question: how do children learn to separate fluency from truth?

Children’s Epistemic Development

Developmental psychology gives us clues. Henry Wellman (2014) traces how children gradually build a “theory of mind,” learning that appearances can deceive and beliefs can be false. Paul Harris (2012) shows how much of children’s knowledge comes through testimony, what they are told by others. They must learn to calibrate trust, balancing confidence with doubt. Koenig and Sabbagh (2013) argue that this calibration, epistemic trust, is a central developmental task.

Generative AI complicates the task. Studies show that children often treat AI agents differently from adults. Druga et al. (2019) found that children asked Alexa or Google Assistant whimsical, personal, or moral questions, and often interpreted the responses as sincere, even when they knew the system was not human. Strasser (2022) reports that children struggle to evaluate the credibility of digital sources, especially when presented in conversational form. Barzilai and Chinn (2020) call the skill we now need *epistemic*

resilience: the ability to maintain scepticism even in the face of fluent, plausible answers. This is more than digital literacy; it is a habit of mind that requires practice. Without it, children may grow up treating confident prose as synonymous with truth.

Teachers often frame their AI worries around plagiarism. But beneath the fear of copied homework lies a deeper anxiety: that children will stop thinking critically. Williamson and Pangrazio (2022) describe how AI creates “synthetic literacy,” where students assemble outputs rather than interrogating them. Holmes (2023) argues that the real challenge for schools is not to prevent AI use but to teach students how to question it. The Turing data underline the stakes. Teachers themselves are already using AI, two-thirds report doing so, often through personal accounts. Yet fewer than a quarter of schools have any AI guidance at all. Teachers are left improvising, even as they sense the epistemic risks. Global organisations are beginning to recognise the need for “critical AI literacy.” UNESCO’s *AI and Education Guidance* (2023) insists that students must learn not only how to use AI but how to *doubt* it. The OECD’s *Education in the Age of AI* (2023) frames scepticism as a core civic competency, necessary for democratic participation. In the UAE, KHDA’s emerging policy discourse has begun to highlight “skills for doubt” as part of AI integration in schools, reflecting awareness that epistemic resilience is not optional in high-tech societies. Without deliberate curricular design, the skill may stratify as privilege: affluent children learning to interrogate AI in classrooms that encourage it, while others accept AI outputs uncritically.

Critical thinking is not just a school skill; it is a civic safeguard. Democracies rely on citizens who can interrogate claims, compare evidence, and resist persuasion by fluency alone. If a generation grows up accustomed to treating AI outputs as self-evident, the consequences extend beyond classrooms. Jacobs and Wallach (2021) warn that persuasive AI could destabilise civic trust if individuals cannot resist the pull of synthetic authority. This is why childhood matters. It is the season of life when habits of scepticism are formed: when children first discover that adults can be wrong, that two books can disagree, that truth must be earned. If AI supplies answers in voices too confident to question, we risk raising children who have never rehearsed doubt.

The paradox of AI childhoods is not that children will stop asking questions. It is that they will stop doubting answers. Fluency has always been seductive, but when machines can generate it endlessly, the line between truth and performance thins. The task for educators and parents is to design doubt back into childhood. The real literacy of the AI age is not fluency but scepticism. Without it, we are not raising children who will thrive in a world of intelligent machines. We are raising children who will mistake fluency for truth, and that is a civic risk we cannot afford.

Playgrounds and Laboratories

When the Turing Institute asked children how they used generative AI, the answers were not confined to homework. Forty-three per cent said they created fun pictures, 40% reported “playing around,” and 37% admitted they used it to get help with schoolwork. In other words,

AI had already slipped into both the playground and the classroom. The paradox is stark: a single tool now entertains, instructs, amuses, and answers. Childhood's two great domains, play and learning, are collapsing into the same machine.

Childhood play has always mirrored the technologies of the age. Gary Cross (2021) notes that toys are cultural artefacts as much as amusements, reflecting the values and economies that produce them. In the nineteenth century, marbles and wooden blocks rehearsed order and geometry; in the twentieth, Meccano sets and chemistry kits rehearsed industrial rationality. Lev Vygotsky (1978) insisted that play is a “zone of proximal development,” where children test out skills just beyond their current reach. Brian Sutton-Smith (1997) described play as inherently ambiguous, at once frivolous and serious, entertainment and rehearsal for adulthood.

Digital media extended this ambiguity. Jackie Marsh (2021) shows how children's play with tablets and consoles became sites of identity-making, not just distraction. Lydia Plowman (2022) adds that even when play looks frivolous (Minecraft castles, Roblox avatars) it develops problem-solving and narrative skills. What distinguishes AI from previous technologies, however, is that the “play partner” responds in real time. A doll is silent, a video game pre-programmed. AI generates stories, images, jokes, and characters that feel co-created. Children quickly discovered that generative AI could be playful. A child can ask for a unicorn riding a skateboard, a bedtime story starring their pet hamster, or a joke about a dinosaur and a teacher. Luciano Floridi (2020) suggests that AI introduces a new mode of creativity: one where children act as curators and directors rather than sole authors. John Knox (2023) observes that classrooms using AI often produce a hybrid form of “synthetic play,” in which machine outputs become raw material for children's improvisation.

Yet questions about authenticity soon arise. X. Zhou (2022) warns that AI-generated creativity risks being derivative, recycling existing patterns rather than fostering genuine novelty. Lee et al. (2023) found that children experimenting with AI tended to adopt outputs uncritically, often accepting the first suggestion as sufficient. Sonia Livingstone (2023) adds that while AI can spark play, it also narrows imagination by nudging children toward predictable tropes. In practice, children blur the line. A session that begins as fun with silly pictures can become homework assistance minutes later. For a generation accustomed to multitasking between TikTok and revision, this is hardly surprising. What is new is the seamlessness: the same tool provides the joke and the essay outline, the silly sketch and the science explanation.

But if AI is a playground for children, it is also a laboratory for corporations. Deborah Lupton and Ben Williamson (2017) coined the phrase “the datafied child” to describe how children's interactions with digital platforms generate valuable behavioural data. Holloway and Livingstone (2021) extend this analysis to play, showing how every keystroke, query, and creative act can be harvested to refine systems. This raises an uncomfortable prospect: children's playful experiments with AI are not only shaping themselves but also shaping the technology. Ben Nansen (2020) calls this the “platformisation of play”, children's games double as inputs into corporate development cycles. Lucinda Pangrazio (2021) highlights the

ethical dilemma: children are effectively unpaid beta testers, producing data that trains and improves tools without informed consent.

Shoshana Zuboff's (2019) broader critique of surveillance capitalism applies directly here: what looks like innocent play is also extraction, fuelling systems designed for profit rather than pedagogy. Unlike the teddy bear or the Lego set, which belonged to the child once purchased, AI tools never leave the corporate ecosystem. The irony is acute. Parents may be reassured when children use AI for "harmless" fun rather than serious homework shortcuts. But the data from playful queries may be as valuable to corporations as the academic queries. Childhood becomes both playground and laboratory, and the child, both player and subject.

Education–Play Fusion

The fusion of play and learning has always been part of schooling. Vygotsky (1978) argued that learning happens best in playful contexts; contemporary pedagogies embrace gamification as motivation (Holmes, 2021). But AI intensifies the collapse of the boundary. When a child asks an AI to "make a funny story about volcanoes" and then uses it in a geography project, is that play or work? Justin Reich (2022) warns that edtech often blurs these categories, reducing both play and learning to the same logic of optimisation.

Neil Selwyn (2022) stresses that when education adopts playful technologies, it also adopts their commercial logics. Williamson (2021) observes that AI tools market themselves as both fun and functional, drawing children into continuous engagement. The OECD (2023) argues that education systems must be alert to this convergence: without guidance, children will learn to treat learning itself as just another game with a machine, a game that always has an answer.

Childhood once had distinct spaces: playgrounds for play, classrooms for work. Generative AI is erasing that distinction. It is toy and tutor, amusement and instructor, joke machine and essay planner. The risk is not simply that children will blur fun with study. It is that their play will become a laboratory for corporations, shaping tools designed for profit, not pedagogy. The question is whether we design AI play as a space for human imagination, or whether we accept a world where the playground is also a laboratory, and the child, the experiment.

Teachers as Underground Innovators

The Turing Institute's report revealed a striking dissonance. Around two-thirds of teachers in the UK are already using AI, often through their own personal accounts, but fewer than a quarter of schools provide any guidance or institutional access. In other words, teachers are experimenting at scale, but unofficially. They are the underground innovators of the AI age: improvising, hacking, and testing, usually in the cracks of their day.

This is not the first time teachers have been in this position. Larry Cuban (2001) documented how technologies like television and computers were "oversold and underused," yet still

reshaped classroom practices in subtle ways. Later, Cuban (2020) observed that teachers often adopt tools pragmatically, bending them to fit local routines rather than following official visions. Neil Selwyn (2011) described this ambivalence: teachers neither resist nor embrace technology wholesale, but negotiate it according to context. The same pattern holds with AI. Rose Luckin (2019) emphasises that teachers are not passive recipients of AI tools; they shape their use in the classroom. Perrotta and Selwyn (2020) argue that teachers' improvisations are central to how deep learning technologies are normalised in schools. Teachers, in other words, are the translators of hype into practice.

What do these underground innovations look like? Research shows teachers are using AI to draft lesson plans, create rubrics, generate example essays, and even craft differentiated tasks for mixed-ability groups (Williamson & Pangrazio, 2022). Holmes (2023) reports that teachers see AI less as a visionary disruptor and more as a practical assistant. Miao et al. (2023) confirm this globally: teachers use AI most often for time-saving, preparing resources, summarising texts, or marking drafts. This pragmatism reflects teachers' enduring role as experimenters. Reich (2022) argues that most technologies in education succeed or fail not because of design but because of teachers' micro-adaptations. In staffrooms and late-night planning sessions, AI is becoming part of these micro-adaptations. Teachers talk to colleagues about prompts that “work,” share screenshots of quirky outputs, or quietly circulate model answers generated by machines.

Risks of the Underground

Yet improvisation without cover carries risks. Zawacki-Richter (2019) notes that many AI systems embed biases or produce errors, leaving untrained teachers to detect problems on the fly. Kimmons (2020) warns that AI may reduce workload in one domain while creating new burdens of checking accuracy and editing. Perrotta (2022) adds that constant experimentation can erode teacher autonomy, as dependence on platforms shifts power away from professional judgment.

Equity is another concern. Holmes et al. (2022) found that affluent schools are more likely to support experimentation with AI, offering devices and freedom to test tools, while less resourced schools are constrained by accountability pressures. Selwyn and Jandrić (2022) argue that this “politics of platformisation” means teachers in disadvantaged contexts have fewer opportunities to innovate, deepening inequality between schools.

Teachers also face vulnerability to corporate influence. Williamson (2021) shows how edtech companies often use teachers as unpaid “beta testers,” drawing on their labour to refine products. Without policy frameworks, the invisible work of teachers improves systems without recognition or protection. Policy guidance is beginning to catch up. UNESCO (2023) calls for structured teacher development in AI, warning that leaving experimentation to individuals risks both burnout and inequity. The OECD's *Teaching in the Age of AI* (2023) argues that teachers must be trained not just in use but in critique, able to recognise bias, data issues, and ethical dilemmas. In Dubai, KHDA's (2025) innovation policy positions teachers as frontline experimenters, though implementation is still uneven.

Educational leadership frameworks echo the need for recognition. Michael Fullan (2020) insists that innovation thrives only when teachers feel supported by a culture of change rather than exposed to its risks. Linda Darling-Hammond (2021) argues that empowering teachers in AI adoption requires not only tools but trust: valuing their professional judgment alongside machine outputs. Teachers are not waiting for permission. They are hacking the future in real time, improvising lesson plans, tinkering with prompts, shaping the classroom of tomorrow in staffroom conversations today. The question is whether we acknowledge and support this underground innovation, or whether we continue to let teachers shoulder the risks alone, building tomorrow's pedagogy in the shadows.

Parents as Designers of AI Childhoods

Only about 37% of children in the Turing Institute's study said an adult had explained AI to them. Yet for those who had, the effect was transformative: these children were more likely to describe themselves as excited about AI and far less likely to report fear. In households where parents were positive, children tended to be positive too; in households where parents were hesitant, children mirrored that hesitancy. Parents may not see themselves as designers of AI childhoods, but their attitudes, conversations, and everyday choices are blueprinting the terrain.

The idea of parents as mediators is not new. Sonia Livingstone and Ellen Helsper (2008) described parental mediation of internet use as a balancing act between enabling and restricting, teaching and protecting. Later, Livingstone and Alicia Blum-Ross (2020) found that parents often improvise "scripts" for digital parenting, blending enthusiasm and anxiety. Similarly, Chaudron et al. (2018), in their EU Kids Online study, showed that parents adopt strategies of restriction, co-use, and active discussion to guide children's digital play. These choices matter because they create the emotional frame around technology. Lynn Clark (2013) argued that the "parent app" is not software but the cultural stories parents tell their children about digital life. Clark and Gorski (2021) add that these stories are deeply shaped by class and inequality. A family that treats AI as a creative partner will give a child permission to play with it. A family that treats AI as dangerous will give a child a posture of suspicion.

Parents hand down cultural scripts about technology. Some frame AI as a threat: surveillance, cheating, addiction. Others frame it as opportunity: creativity, translation, homework help. Pangrazio and Sefton-Green (2021) call this "digital capital": the skills and narratives that families deploy to position themselves within digital culture. These scripts shape how children themselves imagine AI. Bourdieu's classic notion of cultural capital (1986/2018) resonates here. Just as middle-class parents transmit tastes, vocabularies, and dispositions that advantage their children in school, so too do digitally fluent parents transmit AI capital. Holmes (2023) finds that when parents use AI alongside their children, drafting, joking, exploring, children absorb AI as a normal cognitive tool. Reich (2022) reports that families navigate edtech adoption unevenly, with affluent parents more likely to experiment and

model use. Holloway (2022) describes this as “platformed parenting”: parents’ digital practices structure children’s sense of what is legitimate and possible.

Inequalities in Parental Mediation

The Turing survey shows this clearly: affluent households (social grades ABC1) were more likely both to use AI and to talk about it with children. Hargittai (2021) highlights how differences in digital skills persist even when device access is equal, tied to parents’ education. Van Dijk (2020) insists that divides are layered: access, skills, and outcomes. Helsper (2021) extends this to families, arguing that “digital disconnect” is not just individual but relational, children inherit their digital posture from parents.

Thus AI literacy is being transmitted as cultural capital. A child in a London professional household may hear AI spoken of casually at the dinner table, experiment with it in homework, and joke with it for fun. A child in a working-class household in Scotland may hear little about it, encounter it only as a rumour at school, and treat it as alien. The divergence is not technical but cultural.

Global guidance bodies recognise this. UNICEF’s *Policy Guidance on AI for Children* (2022) urges support for families, warning that without parental literacy, children are left to navigate AI alone. UNESCO’s *AI and Education Guidance* (2023) stresses children’s right to informed parental mediation, not just institutional policy. The OECD (2023) calls for “family engagement” in AI adoption, seeing parents as co-educators. KHDA (2025) likewise highlights the role of families in nurturing AI literacy alongside cultural values. Livingstone (2024) argues that parents must be empowered as designers, not bystanders. Marsh (2022) adds that family practices around AI will determine whether children see it as tool, toy, or threat. In other words, the design of AI childhoods is happening less in policy papers and more at kitchen tables.

Parents may not think of themselves as innovators, but their conversations are shaping the architecture of childhood. Every explanation, prohibition, joke, or demonstration builds the contours of children’s trust, scepticism, and creativity with AI. Childhoods are not only designed in schools or governments. They are designed in kitchens, car rides, and bedtime stories. The real question is not whether parents will design AI childhoods, they already are. The question is what kind of parental AI literacy we will cultivate: fear, silence, or intentional design.

Childhoods Without Borders

When the Turing Institute broke down its survey data, one figure stood out. In London, 38% of children aged 8–12 reported using AI. In Scotland, the figure was just 7%. The same country, the same language, very similar education systems, yet vastly different AI childhoods. The UK’s north–south divide is more than economic; it is technological, cultural, and now generational. That disparity is a microcosm of a global reality: AI childhoods are

already plural, uneven, and profoundly shaped by geography. Across the world, governments are making different bets about what AI should mean for children. Singapore, for example, has made AI literacy part of its national digital curriculum. Tan and Koh (2022) describe how AI modules are embedded in primary and secondary education, focusing not only on technical skills but also on ethics, bias, and civic responsibility. The framing is clear: AI is a literacy, as essential to citizenship as reading or mathematics.

Finland offers a different model. Pasi Sahlberg (2021) explains that Finland's embrace of AI builds on its equity-focused tradition. National programmes aim to ensure *every* child has exposure to AI concepts, regardless of school type or region. The idea is not elite fluency but universal competence.

The UAE positions AI as cultural and linguistic enrichment. The KHDA's 2025 policy frames AI not only as a tool for learning but as part of preserving and enhancing Arabic language instruction. The goal is twofold: ensure Emirati students can thrive in a global AI economy while grounding AI literacy in local identity.

China's strategy is more ambitious still. Zhao (2022) notes that AI education is woven into the country's "smart education" plan, linking classroom use to national technological sovereignty. For Chinese children, AI is not just literacy or enrichment but patriotism, a field where personal futures and national strategy intertwine.

Europe offers a counterpoint. Sonia Livingstone (2023) observes that many European states, scarred by data privacy debates, approach AI cautiously, emphasising risks before opportunities. Scotland's reticence reflects this ethos. The result is divergence: a global map where childhoods are being designed differently not because of children's needs but because of political imaginations.

Platformised Childhoods

Yet beneath these national differences lies a common layer: the platforms themselves. Whether in Singapore, Dubai, or São Paulo, children often encounter the same tools, OpenAI, Google's Gemini, Anthropic's Claude. These systems are not neutral. Ben Williamson (2022) argues that platforms "embed particular pedagogical assumptions", about language, knowledge, even creativity. Knox (2023) adds that when children use the same global systems, they absorb the design logics of Silicon Valley, regardless of local curricula.

Nieborg and Poell (2018) call this the "platformisation of culture": a process where a handful of global companies set the norms for how creativity, play, and knowledge are structured. Pangrazio (2022) warns that children grow up absorbing globalised norms that may sit uneasily with local traditions. Even when a country like Finland embeds AI in national curricula, the tools children actually use are often designed thousands of miles away, optimised for English-speaking contexts. This tension is what Shoshana Zuboff (2019) calls the "paradox of surveillance capitalism": local policy can regulate at the edges, but the core logics of platforms (extraction, optimisation, engagement) travel everywhere. Childhoods may look different on the surface, but beneath, they are shaped by the same design defaults.

The most pressing inequalities, however, are not between London and Scotland, or Europe and Asia. They are between the global North and South. UNICEF (2022) notes that children in low-income countries face barriers not only of access but of representation. AI systems are trained disproportionately on English-language, Western data, rendering many children's contexts invisible. UNESCO (2023) warns that without intervention, AI risks deepening global divides: children in wealthy states will learn to shape AI, while those in poorer states will be shaped *by* it.

David Lupton (2022) frames this as data colonialism: the extraction of knowledge, language, and interaction from the global South to enrich systems built in the North. Nick Couldry and Ulises Mejias (2019) argue that AI extends colonial logics: children in Nairobi or Lima may use tools that barely recognise their idioms or realities, even as their data is harvested to refine the very systems that exclude them. Livingstone and Blum-Ross (2020) remind us that parenting and mediation are always culturally situated. Yet when the platforms are global, the mediation is uneven. Marsh (2021) shows how digital play networks connect children globally, but the infrastructure of participation (connectivity, bandwidth, devices) is still stratified. Plowman (2022) notes that even when children do access AI, their ability to experiment depends on wider social and educational scaffolding.

The result is layered exclusion. Children in wealthier states may be rehearsing critical AI literacies in classrooms, while children in poorer states struggle for access to devices. Even when they log on, the systems they encounter are often linguistically and culturally alien. What, then, would it mean to design AI childhoods across borders? The OECD's *Education in the Age of AI* (2023) calls for international frameworks to avoid a patchwork of privilege and exclusion. UNICEF (2022) insists that AI policies must be rights-based, with children's interests at the centre. UNESCO (2023) argues that global cooperation is necessary, because the platforms are global even if policies are local.

There are signs of this shift. Singapore and Finland's models emphasise universality. The UAE and China link AI to national visions but recognise its transformative inevitability. These approaches suggest that design is possible, that AI childhoods are not simply the by-product of corporate logics but can be intentionally crafted. But intentionality must also cross borders. Nieborg and Poell's (2018) warning about cultural homogenisation rings especially true here: without transnational dialogue, AI childhoods may default to the lowest common denominator — fluent, global, but shallow. Reich (2022) argues that global edtech adoption already shows this pattern: impressive in reach, limited in imagination.

For centuries, childhood was imagined as universal. Rousseau, Dewey, and Piaget all wrote as if childhood transcended place. But AI is making childhood plural. In London, a child experiments with ChatGPT for fun. In Dubai, a child uses AI to practice Arabic. In Helsinki, a child learns AI ethics in school. In Nairobi, a child may have no AI access at all. AI is both borderless and bordered: designed by global platforms, lived in local contexts. The real design challenge is whether we can create AI childhoods that honour cultural specificity while safeguarding children globally. If we fail, the risk is not one childhood but many: stratified, fragmented, and designed more by accident than intention.

The Absence of Policy and the Danger of Silence

The Alan Turing Institute's survey revealed a curious paradox. Nearly two-thirds of UK teachers reported already using AI tools, often through personal accounts, outside official systems. Yet fewer than a quarter of schools had any formal policy on AI. In staffrooms, AI is being used to draft lesson plans, mark essays, and generate classroom resources. In boardrooms, policy remains silent. The result is classrooms filled with AI, but schools unable to say what it means. Silence itself has become the design principle.

The history of childhood has always been tied to institutions. Philippe Ariès (1962) argued that the very category of “childhood” was an invention of modern schooling, created by institutions that defined children as distinct from adults. Neil Postman (1994) warned that mass media blurred those distinctions, eroding boundaries that policy and schools had carefully drawn. John Boli (2020) suggests that schooling is not simply local practice but part of a world society: policies and curricular frameworks circulate globally, defining childhood as a civic category. In this light, silence is not neutral. Neil Selwyn (2022) reminds us that education policy is cultural framing as much as regulation. To leave AI unaddressed is to frame it as unworthy of comment, or worse, to cede framing to corporations. Larry Cuban (2020) adds that when schools neglect to contextualise new technologies, adoption happens anyway, but in unacknowledged, fragmented ways. Policy is never just about what is permitted; it is about what is valued.

Risks of Silence

The absence of AI policy leaves teachers improvising with corporate terms of service. Ben Williamson (2021) describes this as “governance by default”: schools relying on the rules embedded in platforms rather than those of democratic deliberation. Shoshana Zuboff (2019) argues that surveillance capitalism thrives precisely in such vacuums, extraction and nudging become normalised not by active consent but by lack of resistance.

The inequities multiply. In affluent schools, leadership teams write internal guidelines, run workshops, and encourage cautious experimentation. In disadvantaged schools, teachers often use AI furtively, unsupported, unsure of what is allowed. Holloway (2022) describes families in similar positions: without policy scaffolding, parents improvise, leading to wildly uneven practices. Lelia Pangrazio (2021) stresses that rights cannot be left to improvisation; children need frameworks that guarantee fairness. Justin Reich (2022) makes the same point: edtech adoption without policy is less a revolution than a drift, one that deepens divides.

The silence also burdens teachers. Improvisation becomes invisible labour: they must experiment, filter, and check accuracy without training or recognition. When things go wrong, biased outputs, data breaches, accountability falls on individuals rather than institutions. Policy silence protects schools but exposes teachers. Elsewhere, governments have taken bolder steps. Singapore has embedded AI literacy in its national curriculum, framing it as a twenty-first-century civic skill (Tan & Koh, 2022). Finland, guided by Pasi Sahlberg's (2021) equity ethos, ensures all children encounter AI concepts, not just those in

well-funded schools. Dubai's KHDA (2025) policy integrates AI with Arabic language teaching, deliberately linking innovation with cultural continuity.

At the supranational level, the European Union's AI Act (2023) introduces risk-based regulation that explicitly includes children as a vulnerable group. The OECD's *Education in the Age of AI* (2023) calls for international coordination, warning that fragmented national approaches will create fragmented childhoods. Global rights-based organisations echo this urgency. UNICEF's *Policy Guidance on AI for Children* (2022) insists on centring children's rights, to privacy, play, participation, in AI design. UNESCO's *AI and Education Guidance* (2023) argues that governments must move beyond prohibition to proactive cultivation: not "keep AI out of schools," but "design AI childhoods deliberately." Sonia Livingstone (2023) stresses that children's rights frameworks must be explicit, not assumed, in AI policy. The contrast is stark. In proactive systems, AI is positioned as literacy, equity, or culture. In passive systems, AI is positioned by silence, which is to say, by corporate design.

What would proactive policy look like? It would begin by asking values questions: what kind of childhood do we want AI to support? Nel Selwyn and Petar Jandrić (2022) argue that critical digital literacy must be at the core, not simply teaching children how to use AI, but how to doubt it, critique it, and contextualise it. Linda Darling-Hammond (2021) insists that equity must frame any educational innovation: AI should narrow gaps, not widen them. Wayne Holmes (2023) argues that AI policy must be pedagogical, not just prohibitive, shaping AI as a tool for inquiry and creativity rather than banning or ignoring it. Michael Fullan's (2020) leadership work adds a final dimension: innovation thrives when teachers feel supported, trusted, and part of the conversation. Silence breeds mistrust; proactive design fosters agency.

The irony of silence is that it is never empty. In the absence of public frameworks, private defaults fill the gap. If schools do not say what AI should mean, corporations will. If governments do not frame children's rights, platform logics will. The absence of policy is not neutrality; it is complicity. Childhood will be designed one way or another. If we remain silent, we design by drift and by corporate fiat. The danger is not that children will use AI without permission, they already are. The danger is that they will grow up in AI childhoods we did not choose.

Choosing the Childhoods of the Future

In the Turing Institute's survey, a child explained why they liked using AI: "*It feels like the robot is my friend.*" It is a simple statement, but it captures the scale of the shift. For children, AI is not just a calculator or a dictionary. It is relational, cultural, even emotional. Adults, by contrast, hesitate, worried about accuracy, safety, and bias. The child sees a friend; the parent sees a risk. Between those two perspectives lies the future of childhood. The realisation that childhoods are always designed is unsettling. We are used to thinking of childhood as natural, spontaneous, innocent. But history shows otherwise. Compulsory schooling was a design. Playground regulations were a design. Even television schedules shaped bedtimes and

routines. AI simply makes the design visible. And unavoidable. There are at least three broad trajectories.

The first is **protective childhoods**: futures where AI is delayed, restricted, or banned for children. This instinct is visible in Europe's AI Act (2023), which frames children as a "high-risk" group requiring special safeguards. UNESCO's *AI and Education Guidance* (2023) echoes this, urging restraint, transparency, and safety-first approaches. The protective future appeals because it is cautious: it buys time. But it also risks exclusion. Shielded children may find themselves unprepared in an AI-shaped society.

The second is **enabling childhoods**: futures where AI is treated as a literacy, a creative tool, a right. Singapore has moved in this direction, embedding AI literacy in its curriculum (Tan & Koh, 2022). Finland frames AI as a universal competence, ensuring all children encounter it, not just those in affluent schools (Sahlberg, 2021). The UAE's KHDA (2025) links AI to cultural enrichment, weaving it into Arabic language instruction. These futures design AI into childhood deliberately, emphasising competence, creativity, and equity.

The third is **exploitative childhoods**: the default trajectory if no deliberate design occurs. In this world, childhoods are shaped by corporate logics: platforms extract data, optimise engagement, and monetise children's curiosity. Shoshana Zuboff (2019) warns that surveillance capitalism thrives in precisely such vacuums. Ben Williamson (2021) calls it "edtech governance by default": corporate policies substitute for public ones. Nick Couldry and Ulises Mejias (2019) describe this as data colonialism, children's interactions feeding global systems that rarely recognise their local cultures.

The troubling truth is that we are already drifting toward the third. Why does this matter? Because childhood is where civic dispositions are formed. It is the stage where we rehearse trust, empathy, and judgment. If AI defines that rehearsal space, civic futures are implicated.

Barzilai and Chinn (2020) argue that education must now cultivate *epistemic resilience*, the ability to doubt fluent but misleading information. Without it, children risk becoming passive consumers of synthetic authority. John Knox (2023) warns that affective AI, designed to recognise and respond to emotions, risks flattening children's expectations of human relationships. Lelia Pangrazio (2022) cautions against outsourcing emotional labour to machines, which may relieve stress but stunt resilience. Peter Harris (2012) emphasises that children learn by trusting what they are told, but they must also learn when not to trust. Henry Wellman (2014) shows how children develop theory of mind, learning that appearances can deceive. These are civic lessons as much as cognitive ones. If children grow up trusting AI uncritically, democratic life itself is weakened. The stakes are ethical too. Childhood is a moral category, a way societies express what they owe their youngest members. If AI childhoods are designed by accident, we abdicate that moral responsibility.

Designing for Equity and Pluralism

Designing AI childhoods is not about finding a single global model. It is about recognising plurality, and ensuring equity. Singapore's curriculum, Finland's equity ethos, and Dubai's

cultural integration each show intentional design. By contrast, Scotland's caution illustrates how policy vacuums can lead to drift. These divergences matter because they set the stage for inequality: some children will treat AI as literacy, others as taboo, others as invisible. UNICEF's *AI Policy Guidance for Children* (2022) insists that equity must be central, warning that marginalised children are most at risk of being excluded. The OECD (2023) echoes this, framing AI as a "commons" issue: left to the market, it will reproduce inequality.

Global justice is also at stake. Couldry and Mejias (2019) show how AI systems trained on global North data marginalise Southern voices. David Lupton (2022) describes this as data colonialism, where children in Nairobi or Dhaka contribute data without recognition. Sonia Livingstone (2024) highlights that even within families, parental mediation varies dramatically by class and culture. Wayne Holmes (2023) notes that teachers are already acting as frontline innovators, but without policy cover, their efforts remain precarious. Selwyn and Jandrić (2022) argue for embedding critical digital literacy, so children can not only use AI but critique it. Design, then, must be plural (different models for different contexts), but also equitable, ensuring no child is excluded from basic AI literacy and no childhood is reduced to extraction.

AI has stripped childhood of its illusion of naturalness. It has revealed that childhoods are always designed, by parents, teachers, states, and corporations. The question is not whether children will use AI. They already do. The question is whether we will choose the childhoods of the future deliberately, or allow them to emerge by drift. We could design protective childhoods, but risk leaving children unprepared. We could design enabling childhoods, embedding AI as literacy and play. Or we could continue drifting into exploitative childhoods, letting corporate logics shape what it means to grow up.

The child who says, "*It feels like the robot is my friend,*" is not imagining the future. They are living it. The challenge belongs to us. Which future will we design?

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