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RECEIVED 30 June 2025

ACCEPTED 14 October 2025

PUBLISHED 25 November 2025

CITATION

Holmes W (2025) AI, education, and children's
rights.
Front. Educ. 10:1656736.
doi: 10.3389/feduc.2025.1656736

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AI, education, and children's rights

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Artificial Intelligence (AI) systems are increasingly being used in education. However, the impact that these AI systems are having on children's rights is mostly overlooked. This paper aims to further a discussion around that omission. Having first explored how AI is distinct from other digital technologies (because its mimicry of human behaviours leads to misconceptions about its capabilities), the paper introduces the United Nations Convention on the Rights of the Child (UNCRC), which establishes key rights for children: the rights to education, dignity, autonomy, privacy, and protection from discrimination and from economic exploitation. Each of these rights are then considered in turn, focusing on how AI systems are complicating things. For example, AI systems lack the empathy and intuition of human teachers, risking the undermining of children's dignity; while the exploitation of children's data by commercial AI developers means that children are working as unpaid labour. The paper concludes by arguing that more ethical research is needed to understand AI's impact on children's cognitive development and rights; while policymakers, educators, and developers must prioritise children's rights and well-being over the contested benefits of AI, to ensure full alignment with children's rights principles.

KEYWORDS

Artificial Intelligence, education, child rights, human rights, well-being

Introduction

Artificial Intelligence (AI) is frequently proposed as a 'powerful' tool to address children's right to, and to enhance their experience of, education. To give just one example, AI, we are told, "has the potential to provide personalised and engaging learning experiences, shifting teachers' workload to more meaningful tasks and changing how and what is taught in schools" (OECD, 2023). However, there remains no independent evidence at scale to support such claims. The available evidence is anecdotal (i.e., based on small-scale examples), speculative ('potential' without evidence is weak), or based on contested assumptions (e.g., that education is all about 'learning' and that 'personalised learning' is worth having). In any case, the negative 'potential' of AI is mostly ignored (e.g., its impact on cognition and critical capacities, agency and self-efficacy, the environment and human rights, Holmes et al., 2022; Holmes, 2023). There is often only simplistic talk of 'ethics', instantiated usually as 'bias', but little more.

While AI is often proposed as a 'solution' to ensuring access to education (e.g., Seldon and Abidoye, 2018), its implications are complex and multifaceted. In fact, various international agencies have considered the impact of AI on education (for example, the EU's AI Act,¹ UNESCO's Recommendation on the Ethics of Artificial Intelligence,² and the OECD's Potential

1 https://www.europarl.europa.eu/doceo/document/TA-9-2024-0138-FNL-COR01_EN.pdf

2 <https://unesdoc.unesco.org/ark:/48223/pf0000381137>

Impact of Artificial Intelligence on Equity and Inclusion in Education).³ However, the negative and often hidden impact of AI systems specifically on children's rights is almost never explicitly considered. The three international publications just noted all mention but do not elaborate on the impact of AI on child rights. The impact is examined by UNICEF, in their Policy Guidance on AI for Children⁴ (2021), but this was written before the public arrival of Generative AI (the launch of ChatGPT in 2022), at a time when the claims for the 'potential' of AI for education were rarely questioned. Nonetheless, this paper aims to extend the discussion initiated by the UNICEF document.

However, before the impact of AI on some key child rights, it is first useful to remember that AI is not simply 'another' digital technology. Instead, AI systems are the first and only technologies to effectively mimic human behaviours, communications, and decision-making processes. AI systems are being sold to us as, appear as, and are perceived as being human-like, often leading to the misperception that they operate with human-like intentions, capabilities, and understanding – when they do not. AI is also not simply a technology, but rather a socio-technical assemblage. In other words, what we call AI is a complex system that integrates both technical and social components – with the social components including the people who design, use, and are affected by AI, as well as the organisational, political, and economic structures, and the societal and ethical norms that shape its development, deployment and impact (Davies et al., 2021).

Children's rights

In 1989 (40 years after the Universal Declaration of Human Rights),⁵ the United Nations Convention on the Rights of the Child (UNCRC)⁶ established a comprehensive framework for safeguarding children, recognising their unique needs as individuals with immature and evolving physical, cognitive, and emotional capacities. Among the key rights enshrined in the UNCRC are children's inalienable rights to education (articles 28 and 29), to protection from discrimination (article 2), to dignity (preamble, articles 23, 28.2, 37, 39, 40), to autonomy (all articles), to be heard (articles 12 and 13), to privacy (article 16), and to protection from economic exploitation (article 32). It is widely accepted that the protection and promotion of children's rights are fundamental (as they ensure that children have access to the resources and support they need to develop physically, cognitively, and emotionally) and that education plays a pivotal role in realising these rights, acting as a multiplier that enhances other human rights when fully enjoyed and negatively impacting them when not.

However, child rights are not without complications. For example, a decontextualised approach might overlook the diverse living conditions and social, economic, and historical contexts in which children grow up, as well as the enormous diversity among individual children (particularly those of different ages, genders, geographic location, religious affiliation, and socio-economic status) (Arts, 2010).

The UNCRC also emphasises the importance of addressing the needs of specific groups of children, such as those with disabilities, refugee children, and children from minority communities. This is complemented by the Convention on the Rights of Persons with Disabilities (CRPD),⁷ which highlights the right to education for children with disabilities, while the Committee on the Rights of the Child⁸ and the UN Declaration on the Rights of Indigenous Peoples⁹ draw attention to the rights of indigenous children. Together, these frameworks underscore the need for inclusive and equitable education systems that reflect the diverse needs of all children. However, achieving this in practice is often fraught with challenges, such as tokenism and the exclusion of certain groups, and is only further complicated by AI.

Right to education

AI systems are often suggested as a means to address children's right to education (articles 28 and 29), particularly where there are no, or too few, experienced or qualified teachers. While using AI systems where there are no teachers might provide some support to some students for some limited time (until the computers are put on the shelf when they stop functioning properly), and it might allow policymakers to claim they are tackling the problem, it does not address the underlying issue of teacher shortages. In fact, spending on AI distracts from investing in human capital: in teachers, teacher training, and schools. In any case, as mentioned earlier, there remains little evidence that any AI system is capable of delivering the high-quality education to which all children are entitled (the right of children to a high-quality education, rather than just to any education, was first elaborated in 2000 in UNESCO's Daka Framework for Action).¹⁰ There is also little understanding of how the use of AI systems in education might not only shape an individual child's experience of education in the moment but might also affect their neurological, cognitive, emotional and social development, and their future life (e.g., how does interaction with voice-operated tools shape how children speak, communicate and socialise?).¹¹

3 https://www.oecd-ilibrary.org/science-and-technology/the-potential-impact-of-artificial-intelligence-on-equity-and-inclusion-in-education_15df715b-en

4 <https://www.unicef.org/globalinsight/media/2356/file/UNICEF-Global-Insight-policy-guidance-AI-children-2.0-2021.pdf.pdf>

5 <https://www.un.org/en/about-us/universal-declaration-of-human-rights>

6 <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child>

7 <https://social.desa.un.org/issues/disability/crpd/convention-on-the-rights-of-persons-with-disabilities-crpd>

8 <https://www.ohchr.org/en/treaty-bodies/crc>

9 <https://www.ohchr.org/en/indigenous-peoples/un-declaration-rights-indigenous-peoples>

10 https://www.right-to-education.org/sites/right-to-education.org/files/resource-attachments/Dakar_Framework_for_Action_2000_en.pdf

11 <https://www.unicef.org/innocenti/reports/policy-guidance-ai-children>

Right to protection from discrimination

The right not to suffer from discrimination (article 2) is a fundamental principle that applies to all aspects of children's lives, including education. Accordingly, AI systems for use in education must be designed to be non-discriminatory, fair, and inclusive throughout their lifecycle. However, biases in AI systems, whether due to stereotyping, historic inequalities, biased data, or discriminatory algorithms, can perpetuate discrimination (Baker and Hawn, 2022). For example, AI systems that use gender-neutral terms in one language often translate them into gendered terms in another, reflecting and reinforcing existing gender inequalities.

The use of AI systems in education also raises questions about equity and access. While AI systems might benefit some children, they might also exacerbate existing inequalities. For example, AI systems that categorise students based on perceived disabilities might lead to exclusion and stigmatisation. Similarly, children from socio-economically disadvantaged backgrounds might lack access to the necessary technology and Internet infrastructure, further marginalising them. This digital divide, the gap between those who can afford digital technologies and those who cannot, undermines the principle of equal access to education and highlights the need for policies that ensure all children can benefit from technological advancements.

However, thanks to AI, things are likely to become more confused. In the near future, the digital divide might flip – with children from wealthier backgrounds having access to human teachers and all the benefits of human-to-human interactions in education (involving robust and well-evidenced pedagogies), while those from disadvantaged background have to make do with being taught by machines – didactically, individually, and screen-based. Already, leading fee-paying schools typically market themselves on the quality of their teachers, not on their digital technologies.

Right to human dignity

The right to human dignity underpins many other rights. In the context of AI and education, it implies that tasks such as teaching, assessment, and accreditation should not be delegated to AI systems unless it can be demonstrated that doing so does not violate children's dignity (article 28). Even when this high standard is achieved, human teachers must remain central to these processes, as they are better equipped to understand and respond to the emotional and psychological needs of children. Perhaps despite some appearances, AI systems lack the empathy and intuition that human teachers bring to the classroom (Bender and Hanna, 2025). Accordingly, while AI systems might provide some support, they cannot replace the human connection that is essential for fostering a positive and inclusive learning environment. Delegating critical educational decisions to AI systems risks undermining children's dignity and reducing them to data points, rather than treating them as individuals with unique needs and potential.

Right to autonomy

The right to human dignity is closely linked to the right to autonomy (e.g., article 12). AI systems designed for education

typically dictate what, when and how children should learn something (these are the AI-enabled 'personalised' pathways so frequently promoted), but this undermines children's agency – their right to make individual choices – in their own learning. Some might argue that teachers have always made the decisions and children do as they are told. However, the difference is that, unlike AI systems, teachers make their decisions based on real knowledge of the individual children, their strengths and weaknesses, their interests and aspirations, and their friends and family backgrounds – while AI systems make their decisions based on averages. In any case, teachers work with relatively small numbers of children (around 30–40 in a typical class), while a single AI system can impact many thousands (Holmes, 2023).

In addition, the right to contest and challenge AI-driven decisions (as exemplified in the EU AI Act article 69) is crucial, as is the right to be excluded from AI-enabled manipulation and profiling. However, such rights mostly remain aspirational and are rarely upheld in practice. In any case, the use of AI in education raises concerns about the accuracy and fairness of data-driven decisions. For example, AI systems mainly use historical data to determine learning pathways and to predict learning outcomes, which might perpetuate biases and inequalities. The data used to train these systems almost always reflect past discrimination and inequities, leading the AI system to replicate and amplify these biases, leading to unfair outcomes for certain groups of students.

At the same time, children and their parents should have the right to understand how AI systems make decisions and should be able to challenge those decisions, if necessary (Holmes et al., 2022). In some contexts, parents also have the right to refuse the use of AI systems in their child's education, to avoid possible AI-enabled manipulation, individualised profiling, and prediction, without detriment. However, these rights are rarely upheld in practice. The proprietary nature of many AI systems often makes these rights difficult to achieve while the question of consent in the context of AI remains complex. For example, schools might require the use of AI systems as part of their curriculum, leaving little room for parents and children to opt out. This raises important questions about how consent is obtained and whether it is truly informed and voluntary. Ensuring that children and their parents have the right to withhold or withdraw consent is essential for protecting their autonomy.

Right to be heard

The right to be heard is a cornerstone of the UNCRC (article 12), emphasising the importance of children's participation in decisions that affect them (Lundy et al., 2022). Accordingly, children should have the opportunity to express their views on matters such as the use of AI in their education, and these views should be given due weight in accordance with their age and maturity. However, in practice, children's voices are often displaced by the supposed objectivity of data-driven technologies. For example, AI systems that monitor and analyse students' behaviour and performance might override children's right to express their own perspectives and experiences. Meanwhile, the data generated by these systems are often treated as more authoritative than the subjective voices of children, leading to a situation in which technology, rather than the child, exercises 'rights'.

Right to privacy

Children's privacy (article 16) is increasingly at risk due to the invasive data practices of AI systems. Data is central to machine learning, which automatically and continuously collects, aggregates, analyses, and acts upon data points generated by user interactions. This can be invasive and have panoptic effects, causing individuals to alter their behaviour. In addition, the AI approach to monitoring students is more long-lasting and commercial compared to the personal and ephemeral approach of human teachers. However, while data protection laws do exist, they often fail to adequately protect children from the collection and misuse of personal data. AI systems used in education often collect vast amounts of data on students, including information about their behaviour, performance, and even emotions. This data is typically stored and analysed by commercial developers, raising concerns about how it is used and who has access to it. The right to privacy is not only a protective right (Čulo Margaletić and Preložnjak, 2023) but also an enabling right, essential for the exercise of other rights such as freedom of expression and assembly. Ensuring that children's data is kept private, protected and used ethically, is therefore crucial.

Right to be protected from economic exploitation

The exploitation of children's data by commercial AI developers also raises significant ethical and legal questions (article 32). While data protection laws aim to prevent such exploitation, enforcement remains weak, and the concentration of power among a few large companies exacerbates the problem (Bologa, 2023). For example, the data generated by children's interactions with AI systems (what they click, type and draw) are extracted by the owner of the system (the huge majority of AI systems in education are commercial and proprietary) and are used to train and improve their systems, so that they can be sold into more schools, creating additional profits for the developers. The children, their parents, and their schools rarely have control over how the data are used or who benefits from them. Accordingly, in an important sense, the children who use these AI systems are working as unpaid labour for the commercial organisations – thus treating them as commodities and undermining their right to be protected from commercial exploitation.

The role of educational leadership

Educational leadership have always been responsible for safeguarding the human rights of the children in their care – a role that is only made more challenging by the growing ubiquity of AI (Fullan et al., 2024). Nonetheless, school leaders (school principals, inspectors, policymakers, etc.) must act as the primary guarantors that any adoption of AI in education aligns fully with the principles of the UNCRC and related global conventions (Michopoulou and Gan, 2025). In other words, education leaders must adopt the precautionary principle, not allowing themselves to be seduced by the marketing, before allowing any AI systems into classrooms or other educational contexts. Specifically, they must prioritise children's well-being over the commercial and speculative claims of the developers, listening to the voices of the children and their parents; they must

actively scrutinise the putative and highly contested 'benefits' of AI against the critical albeit hidden risks noted above, demanding high quality evidence for the safety and effectiveness of the AI systems being considered; and they must establish clear policies that ensure AI does not perpetuate discrimination or lead to economic exploitation, while demanding rights-based regulation. Finally, to ensure children's right to a quality education, they must ensure that human teachers remain central to education for all children.

Conclusion

It is a common belief that, if developed responsibly, AI systems have the potential to enhance education in meaningful ways – that AI might support inclusion, engagement, learning, and so on. However, at the risk of being repetitive, there remains limited (if any) independent evidence at scale that this is what AI does or can actually do. Indeed, claims for AI's potential are either empty (almost anything can have 'potential') or entirely speculative and derived uncritically from assertions made by industry and techno-enthusiasts. In particular, it is far too early to know how contemporary AI systems (especially the LLM chatbots such as ChatGPT) are impacting children's cognitive development, agency, and critical capacities. Accordingly, rather than casually experimenting on children by implementing unevidenced technologies in their classrooms, we need far more time and far more rigorously ethical research that scrutinises what actually happens when AI systems are allowed into educational contexts. In other words, for those of us who believe that children's rights are fundamental, we must robustly challenge the claims for AI's 'potential', and we must demand high quality evidence and rights-based regulation – both to guide any future development of AI systems designed for use in education (to ensure that the systems are ethical, responsible, afford a quality education, and respect child rights) and to mitigate the many already evidenced, and those yet to be evidenced, risks.

The point is that, while we have scant evidence for the effectiveness or safety of AI systems in education, there is mounting evidence that those systems already pose significant albeit hidden risks to children's dignity, autonomy, voice, and privacy. They also undermine children's rights to be protected from discrimination and exploitation. The UNCRC framework is the key tool that we have for safeguarding child rights, but its effectiveness is limited by weak enforcement mechanisms, the complexities of diverse social and economic contexts, the hidden ways in which AI systems are increasingly challenging those rights, and the myths and misinformation believed by too many in positions of authority.

In summary, before AI systems are more widely implemented throughout education (it is late but not too late to act), it is imperative that policymakers, school leadership, educators, and developers prioritise the rights and well-being of children, over the unevidenced, putative and highly contested 'benefits' of the technology, to ensure that any AI systems used in education are fully aligned with the principles of child rights. Only by doing so can we create an educational environment that truly empowers and respects children.

Author contributions

WH: Conceptualization, Writing – review & editing, Writing – original draft.

Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

Acknowledgments

The author would like to thank the editor, Hamdi Addow, for her kind guidance and support. He also wishes to acknowledge his colleagues at the Council of Europe for the original discussions that informed many of the ideas presented in this paper.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Generative AI statement

The author declares that no Gen AI was used in the creation of this manuscript.

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