GLOBAL EDUCATION AS A DEFENCE AGAINST THE HARMFUL IMPACTS OF ARTIFICIAL INTELLIGENCE IN EDUCATION

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Abstract: This Perspectives article looks at the challenges and issues within education that are emerging as a consequence of the growth in the use of artificial intelligence (AI). It argues that AI is having a harmful impact on education in a number of areas. The article suggests that by integrating global education (GE) into curricula and practice, educators can mitigate against this harm. The article begins with an Introduction to AI, focusing on the type of AI most prevalent in education; i.e., generative artificial intelligence (GenAI), which uses machine learning models to generate text, images, audio, video etc., based on prompts which have been inputted by a user. It then examines how and why GenAI has been adopted in such an uncritical manner within the education sector. Following that, common themes associated with GE are identified using a range of policy and guidance documents from Irish and international documents.

The main body of the article looks at the various areas where AI is having a harmful impact on education: epistemology; pedagogy; human rights; and sustainability. For each of these, the nature of the harm is explained, and the potential positive contribution of GE is identified. The article concludes with some advice for educators who may be concerned about the rise of AI in education, suggesting they can be pro-active in their adoption of progressive pedagogy and practice to ensure learners are equipped for changing times and can take action to create a better world.

Key words: Artificial Intelligence; Global Education; Epistemology; Pedagogy; Sustainability.

Introduction

There is a tension within education as we enter the second quarter of the twenty-first century. Whether at the level of policy, practice or wider discourse, there are competing forces struggling to shape the trajectory of what we perceive as progress. On one hand, there is a growing interest in the broader purpose of education as a force for social good. Whether it's development education, education for sustainable development (ESD), global citizenship education (GCE), or any of the other 'adjectival' forms of education that seek to promote social, global or climate justice, there is an increasing awareness that these themes and issues should be integrated into curricula and practice. For convenience sake, and in line with the European Declaration on Global Education to 2050 (GENE, 2022), these will be referred to as global education (GE).

However, competing against this is the growing presence of artificial intelligence (AI). Fuelled by corporate interests and big tech, the pressure to integrate AI into education to improve efficiencies and prepare learners for an uncertain future is having a profound impact on educators, students, and institutions alike. This article will illustrate how AI is harming education and suggests that integrating GE into curricula and practice can act as a defence against these harms and ensure that educators and learners know that they can make choices that will limit the consequences. The article introduces some of the key areas where AI is having an impact and suggests potential responses. The limitations of space prevent a more complete discussion of each, but the literature is rich and a fuller exploration is encouraged. The article is mostly framed by practice in Ireland, however, it assumes that the points made are applicable to other countries and jurisdictions.

The article is structured as follows. It firstly introduces what is meant by AI, the particular forms of AI that are having an impact on education and considers how and why they have become so prevalent. It then discusses some of the common themes and priorities that unite GE before considering the negative consequences of AI for education (and beyond) with a specific focus on epistemology (what is taught), pedagogy (how teaching and learning happens), human rights and social justice (who benefits from teaching and learning), and sustainability (the impact of education on the planet). For each, the harms of AI

are identified and the way GE can mitigate against them are explored. The article concludes with some words of advice on how educators can navigate the problems presented by AI which can hopefully have a positive impact on their practice.

AI: what is it, and how did it become so prevalent in education?

AI is a catch all term that describes a variety of technologies that perform a range of functions, some of which impact on everyday life and others which have very specialised uses. At one end of the spectrum, predictive text can support the completion of coherent sentences. At the other, breakthroughs in medical technology can improve diagnostic accuracy. When looking at the impact of AI on education, the discussion mainly focuses on generative artificial intelligence (GenAI). This specific type of AI uses machine learning models to generate text, images, audio, video etc., based on prompts which have been inputted by a user.

GenAI first came to public attention in 2022 with the introduction of ChatGPT created by OpenAI. Since then, other models have entered the market, such as Microsoft's Copilot, Google's Gemini, and Anthropic's Claude. Discussing AI's impact, Shi et al (2026: 1) write: 'It almost goes without saying that artificial intelligence (AI) appears to be of major social, economic, political and cultural significance – a set of technologies that have been placed at the forefront of the world's attention'. Some of the earliest writing on the impact of AI on education (AIEd) was positive, particularly regarding what Tuomi (2018) referred to as 'gofai' or good old-fashioned AI. He notes how AI provides a range of benefits, from generating summative assessments to identifying the needs of individual learners. Kimondo et al (2023) also identified positives, highlighting benefits in terms of monitoring and personalising the teaching and learning process.

This positivity took hold quickly, resulting in the strong uptake of AIEd. For example, the Digital Education Council's (2025) AI Faculty Survey notes how 64 percent of faculty are now using AI, with 75 percent using it to generate teaching materials. For students, the numbers are more dramatic, with the Higher Education Policy Institute's 2026 survey showing that 94 percent of respondents are using AI for assessed work. Significantly, this same study suggests students are more likely to see the benefits of AIEd, with very few concerned about fairness,

skills erosion, or social isolation. So, how did this positivity take hold and how did AIEd become so universally, and uncritically adopted? Three broad reasons will be discussed: the 'halo' effect; the power of big tech; and dominant discourses around AIEd. Wärnestål (2025) describes the halo effect as a psychological phenomenon that results in our overall impression of something being shaped by a single positive trait. GenAI is surrounded by such an effect, whereby due to the benefits in areas such as healthcare, it is assumed these will be repeated in every area, including education.

So, what are the forces generating the halo effect? One possible answer lies with the power of big tech, those companies with a commercial interest in educational institutions adopting and using AIEd. Guest et al (2026) begin from a position that education should be a space for the development of knowledge free from ulterior motives; however, it is increasingly under attack from hostile and self-interested actors. They relate this directly to how neoliberalism is impacting education and targeting educational institutions. Indeed, Shi et al (2026: 2) argue that 'education has been cynically established as one of the main (and most susceptible) markets for GenAI products'. They suggest that the deployment of AI in education is intertwined with political and economic interests, including big tech firms, investors, and policy actors. These interests can shape educational priorities, business models, and governance structures, along with how they may advantage or disadvantage different populations (Ibid.: 5-6). Furthermore, the technologies are pushed in a manner that suggests there is no alternative.

O'Neil (2026: 3) sees AIEd as part of the bigger problem of the impact of EdTech, suggesting companies are motivated exclusively by profit accumulation, resulting in practices which are potentially 'devastating or ecocidal'. O'Neill notes how this is particularly concerning given that education ought to be in the public interest and, in the Irish context, educational institutions are mandated to reduce their carbon usage. Significantly, the power of EdTech companies to have such an impact on education is supported by powerful discourses. In their analysis of policy and guidance documents from organisations such as the OECD (Organisation for Economic Co-operation and Development) and UNESCO (United Nations Educational, Scientific and Cultural Organisation), Bryan and

Delahunty (2026) show how these discourses stress not only the benefits but also the inevitability of AIEd. They posit that a combination of techno-solutionism and 'promissory visions' results in a populist discourse that highlights the benefits of AIEd at the expense of more critical discussions around justice and sustainability. AI is presented as an inevitability that can save outdated forms of education that are no longer fit for purpose.

Against AI: themes and perspectives in quality GE

As stated previously, this article sets out to illustrate how adopting quality GE into curricula and practice can mitigate against the most harmful impacts of AIEd, so it is important to identify some common themes and priorities within GE. To do this a range of international and Irish-based resources have been analysed. These include the UNECE's (United Nations Economic Commission for Europe) Learning for the Future (2012), UNESCO's 'Berlin Declaration on Education for Sustainable Development' (2021) and 'ESD to 2023 Toolbox' (UNESCO, n.d.), the European Commission's 'European Sustainability Competence Framework' (Bianchi, Pisiotis and Cabrera Giraldez, 2022), the GENE European Declaration on Global Education to 2050 (GENE, 2022), Irish Aid's Global Citizenship Education Strategy 2021-25 (Irish Aid, 2021), WorldWise Global School's (n.d.) 'Guiding Principles for Global Citizenship Education', and the Irish Development Education Association's 'Code of Good Practice for Development Education' (IDEA, 2019) and 'Theory of Impact for Global Citizenship Education' (IDEA, n.d.).

From these, it can be concluded that quality GE goes beyond knowledge acquisition and ensures learners are given opportunities to reflect on their values in order to act on issues at a local and global level. It develops a wide range of skills, sometimes referred to as 21st Century skills or transversal skills, such as critical thinking, systems thinking, problem framing and solving, and futures literacy. GE also encourages learners to recognise the structural connections between their own lived experience and global issues. In doing so, GE foregrounds justice and understanding of the causes and consequences of oppression and injustice. This in turn supports critical perspectives on power relations and provides opportunities to take informed collective action on local and global issues. These actions focus on the root causes of injustice and address

them through solidarity that builds an awareness of human rights, anti-racism, and colonialism. Thus, GE's pedagogies and methodologies promote experiential, participatory, democratic, and discursive approaches. These global education values and principles highlight some of the approaches that can be integrated into curricula and practice, regardless of academic discipline, to potentially shield education from the worst harms of AIEd.

AI's impact on education and how educators can use GE to resist the harms

Epistemology (what is taught)

Epistemology is a complex concept which incorporates many dimensions of knowledge; however, for this article, the discussion will be limited to what knowledge is considered important or valuable - the origin and scope of that which is taught and, conversely, what knowledge is considered less important and is, therefore, omitted from teaching. There are growing concerns that AIEd is influencing the types of knowledge perceived as legitimate or important and, more significantly, those that are excluded from education. Wärnestål (2026) notes that the type of large language models (LLMs) that are the foundation of much AIEd are biased toward and optimised for students in the global North, particularly English-speaking nations. They do not respect knowledge created in the global South or represent the lived experiences of people there. Additionally, Stephens (2026) argues that AI also has a problem with women's rights, LGBTQIA+ rights, and broader social inclusion.

Nguyen (2020) makes a series of points on algorithms, noting how they produce a form of knowledge limited to a small number of viewpoints. Personalised technology, selective exposure, and algorithmic filtering create 'epistemic bubbles' where opposing or minority voices are simply not heard. Coeckelbergh (2026) relates the idea of epistemic bubbles directly to AI, arguing that it diminishes a user's 'epistemic agency', reducing their freedom to reflect on their values and beliefs. He suggests that the exclusion of certain perspectives is related to power, noting that 'it seems that there is no epistemic equality, globally or locally' (Ibid.: 67). Coeckelbergh draws on the work of Charles Wade Mills (2007) to suggest that AI supports a 'white ignorance', privileging certain voices at the expense of others. This can be viewed as a form of 'epistemic injustice' (Fricker, 2007) while Andreotti (2006) sees it as a form of 'epistemic violence'

whereby learners in the global North do not understand the root causes of their own privilege or global injustice.

It is clear how this can have a detrimental impact on the educational attainment of members of certain social groups, with the potential to consolidate and amplify existing injustices both locally and globally. However, sitting in direct opposition is the approach to knowledge evident in good GE. In the literature, there are multiple references to the inclusion of marginalised and minority voices and perspectives, as well as explicit references to anti-racism. Furthermore, the importance of challenging bias and stereotypes is evident, alongside calls for solidarity and empathy, which suggests a deeper knowledge and understanding of a wide range of views.

Another process that complements GE is that of decolonising curricula. Heilbronn (2025) suggests this is required in response to significant epistemic injustice against Indigenous groups, while Engelmaier (n.d.) notes the importance of examining power and asking who decided what was legitimate knowledge in the first place, suggesting that 'decolonising curricula must therefore be intersectional, recognising how race, gender and class and colonial histories overlap'. Higher Education Institutions in and beyond Ireland are embracing this process (see, for example, Trinity College Dublin, n.d; Dublin City University, 2026; and Manchester Metropolitan University, n.d.) and while they recognise it is difficult in the current policy climate, Glowach, Hicks-Beresford, and Mitchell (2023) raise the importance of beginning it in secondary schools.

Pedagogy (how teaching and learning happens)

A second way AIEd is having a significant impact on education is in the area of pedagogy. This article will touch on three related areas: teaching; learning; and assessment. Peter Baker (2026) makes an important point: teachers are generally very responsible. They want to do right by their students by developing their skills but also ensuring they don't fall behind by not embracing new technologies. However, Curran (2026) notes that while education has increasingly been about the holistic development of learners, AI has entered the room, a technology which 'strangulates human creativity, critical thinking, and independence of thought'.

In this context, the role of teachers and teaching is likely to change; however, the exact direction is uncertain. On one hand, Bryan and Delahunty (2026: 1) refer to 'ex-machination' with the role of teachers reduced to 'techno-pedagogues and ethical gatekeepers'. Conversely, Chatfield (2025) suggests the role will evolve. Teachers will develop a 'pedagogical empathy' (Ibid.: 22) for individual learners and a sophisticated understanding of what AI can and should do in the classroom. However, this perspective embraces the 'technosolutionism' described by Mochizuki, Bruillard and Bryan (2025), whereby teachers are wrongly presented as a problem - a barrier to the solutions offered by AI. Instead, they argue that AI ought to be seen as the challenge rather than a solution.

And while there are certainly challenges for teachers and teaching, AIEd is having a major impact on learning itself. Much of the literature here focuses on the impact AI is having on key skills, such as critical thinking, problem solving, systems thinking, and creativity. Pearson (2025) accepts that there are benefits to AI in terms of efficiently preparing students for a rapidly changing world; however, she recognises how it can impede their cognitive development, including the development of key skills. Adelman and Burke (2026) take a more dramatic tone: 'AI is coming for human thought… it is poison for education in the humanities and social sciences.'

Furthermore, in a discussion on the ethics of using AI in primary and secondary schools, Wieczorek, Hosseini and Gordijn (2025) highlight a series of impacts on learning, stemming from the propensity to use AI as a form of passive knowledge acquisition. Among these are students becoming increasingly distracted, dependent on technology leading to reduced problem-solving skills and curiosity to explore issues and topics outside what is presented to them by the algorithm, and increased isolation as learning becomes individualised.

And while a decline in thinking skills is concerning, AI could be contributing to more fundamental problems. Jagt (2026) suggests students are losing the ability to read and write. Rather than an efficient way to cover the basics, allowing students to concentrate on higher order skills, AI is depriving them of the development of essential skills. This view is supported by Guest (2026: 12) who argues that LLMs in the classroom will increase illiteracy and

dependence on big tech.

Finally, and dominating much of the discourse around the impact of AI in education, is assessment, a discourse that often goes beyond concern and hints at panic as it has such a profound impact on the area of academic integrity. Guest (2026: 12) accepts that cheating has always existed; however, the use of LLM chatbots to complete assignments not only damages educators and learners, it also erodes public trust in education itself. Pearson refers to 'testing troubles' (2025: 791) noting that the use of unsupervised tests is problematic as they no longer, with any certainty, inform society of the skills or capabilities a student holds. Chatfield (2025: 15-17) recognises that AI has contributed to a deepening crisis in education as the assumption grows that everyone is cheating; furthermore, he suggests the institutional response of retreating back into supervised testing is not fit for purpose.

Having identified these issues related to pedagogy, it is again valuable to examine what can be learned from quality GE to mitigate against them. With regard to teaching and learning, quality GE involves the adoption of critical pedagogies and transformative learning. Critical pedagogy is most often associated with Paulo Freire (2017) who rejects education based on rote learning and advocates for a dialogical approach, rich in critical thinking. Likewise, Misiaszek's (2023) work on environmental education promotes a view of education that enables learners to critically 'read' acts of environmental violence and identify who benefits and who suffers. Like Freire, he suggests this is achieved through open discussion and deep reflection.

The aim of GE is transformative learning. Originally developed by Mezirow (1997), this centres on the idea that education can allow learners to reorient their values through dialogue and reflection. Rodriguez and Barth (2020) note how applying these principles to issues such as sustainability can result in improved outcomes including increased knowledge and critical and systems thinking. Similarly, Odell et al (2020) note how transformative learning allows for learning that goes beyond knowledge and develops new worldviews, norms, theories, and action.

Significantly, these approaches require teachers and learners to engage in activities and methods that are missing when AIEd appears, such as allowing space for dialogue and reflection and actively developing skills such as critical and systems thinking. This suggests there is a reciprocal relationship between quality GE and the development of key skills, which are under threat with the use of AIEd. While these skills are important in recognising, understanding and empowering learners to take action on social, global and climate justice issues, engaging with these issues and integrating them into curricula, gives learners the opportunity to develop these skills.

Finally, with regards to assessment, it is interesting to note how many forms of 'authentic assessment' complement the broad aims and pedagogical approaches of GE. For example, challenge-based learning (Doulougeri et al, 2024) allows for engagement with real world challenges, frequently related to social, global and climate justice, resulting in the development of key skills such as critical thinking and problem solving.

Human rights and social justice (who benefits from teaching and learning?)

A number of the human rights and social justice concerns related to AI have already been discussed in this article. It has been shown that AI can have a negative impact on minority and marginalised social groups, both locally and globally, consolidating and amplifying injustice. This concern is brought into sharp focus by a report from Amnesty International (2026: 13-18) which illustrates how GenAI infringes on human rights in a number of areas, all of which have relevance for education. These include the right to privacy, the right to equality and non-discrimination and freedom of expression and thought. Furthermore, as Bryan and Delahunty (2026: 3) point out, most discussions around AI and related rights are limited to how it is used. Bigger concerns relate to issues of power and the shaping of public life in the interests of big tech. GE has a two-fold role to play here: encouraging resistance to the normalisation of AIEd and highlighting the deeper injustices that have a powerful impact on broader society.

Sustainability (the environmental impact of AI in education)

Finally, it is impossible to talk about AI without discussing sustainability. While this might be related to education less directly, there is no doubt that educational

institutions are contributing to the climate crisis through their uncritical adoption of AIEd. Furthermore, and to misquote the Music Declares Emergency movement (n.d.), there will be 'no education on a dead planet'. Stephens (2026) notes that every AI search involves significant energy use, creating a demand resulting in 'accelerating climate chaos and negating decades of climate policy designed to reduce both energy use and carbon emissions'. Riemlaud (2026) suggests that education's rush to embrace AI has resulted in a lack of consideration for the ecological consequences. Furthermore, the growing relationship between education and industry prevents the necessary criticality to resist this trend.

A recent review of reports and academic papers on AI conducted by Stand, Friends of the Earth and others (Joshi, 2026) illustrates a 'shocking' new demand for fossil fuels, primarily coming from data centres used to power GenAI - the exact form of AI used in education. Furthermore, this review illustrates a sinister form of greenwashing from big tech that seeks to promote the ecological benefits of AI, made more problematic as the claims come from company websites rather than academic papers, noting that any benefits from traditional AI are dwarfed by the harms caused by data centres used to power GenAI. GE has a role to play in challenging unsustainable behaviour both within and beyond the education system. At the most basic level, this involves integrating climate literacy into curricula; however, quality (or critical) GE has the potential to go further by highlighting issues related to climate justice, foregrounding the structural and political nature of these issues, and empowering learners to take action and demand change.

Climate justice goes beyond 'the narrow technocratic way that climate action is often presented' (Stephens, 2024: 30) and includes an appreciation of the systemic and structural relationship between the climate crisis, the broader political and economic systems, and other forms of injustice. The strong focus within GE towards understanding the root causes of injustice and linking the local to the global, as well as building skills such as systems thinking and futures literacy, enables learners to see these relationships, understand the connections between all forms of injustice, and move towards taking action. Furthermore, while the disciplinary nature of mainstream education, especially in upper

secondary level and higher education, can mask these relationships, GE promotes an interdisciplinary or transdisciplinary approach which allows the connections to come into focus.

Conclusion

GenAI is having a significant impact on education and while it is presented as benign by the companies that profit from it, there is little doubt that it is causing harm to educators, learners, the reputation of the system, and to the environment. In response, Neil Selwyn (2022) suggests three possible ways forward. Firstly, continue with the present course and see where it takes us. This is a risky option, but one which advocates of technosolutionism would suggest is unlikely to lead to significant harm. Secondly, attempts can be made at 'greening' AI. This is the position of big tech, who say we should trust them to make their products better and more sustainable. Finally, 'burn it to the ground' - resist AI wherever and whenever it is possible and liberate education from neoliberal growth models.

However, another option is presented in this article. An option that puts power in the hands of educators. An option that trusts their judgement and positions them in a space where their skills and professionalism can be used to protect against the harms of AIEd. An option that can inspire their learners to resist the malign creep of neoliberalism and growth-based economic orthodoxies. By integrating the themes and approaches developed by and evident in quality GE, all educators can not only prepare their pupils and students for an uncertain future, they can inspire and empower them to demand and work for a more fair, just and sustainable future.

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