



Artificial Intelligence in Educational Research and Scholarship: Seven Framings

Associate Professor Eamon Costello^a, Associate Professor Giselle Ferreira^b, Professor Stefan Hrastinski^c, Professor Jason K. McDonald^d, Associate Professor Ahmed Tlili^e, Professor George Veletsianos^f, Associate Professor Victoria I. Marín^g, Associate Professor Henk Huijser^h, Sharon Altena^h

^a Dublin City University, Dublin; ^b Pontifical Catholic University of Rio de Janeiro, Brazil; ^c KTH Royal University of Technology, Sweden; ^d Brigham Young University, USA; ^e Beijing Normal University, China; ^f University of Minnesota-Twin Cities, USA; ^g University of Lleida, Spain; ^h Queensland University of Technology, Australia.

Editors

Section: Educational Technology
Editor in Chief: Joesph Crawford
Senior Editor: Rachel Fitzgerald

Publication

Submission: 2 Aug 2025
Revised: 5 Sept 2025
Accepted: 8 Sept 2025

Copyright © by the authors, in its year of first publication. This publication is an open access publication under the Creative Commons Attribution [CC BY-ND 4.0](#) license.

Abstract

In a recent interview (Bender et al., 2025), Professor Emily M. Bender discussed the limitations of technical solutions in addressing harmful Artificial Intelligence (AI) bias. She described a particular point we may reach at which technical solutions stop working, and when we should then widen the lens to ask about the problem framing itself. This is a crucial step in any inquiry that is of concern to both novice and experienced researchers alike: moving from problem-solving to problematisation. This commentary aims to provide educational researchers with a glimpse into the wide array of research problems and problematisation of AI in Education (AIED). It discusses seven framings of AIED: methodological pluralism; metaphors; ethnographic studies; imagining futures through fiction; humanistic groundings of AI design and development; third space professionals in research; and open education. We describe why these particular frames are relevant and how we wrote this commentary. We go on to suggest that to sustain the desirable but sometimes elusive nexus between research and teaching, we need to see both as rich, diverse, and distributed activities consisting of many actors. We seek to probe: What is AI? Who gets to say so and why? What critical, creative and pluralistic approaches can we take to research into its effects on the outcomes and experiences of students in higher education?

Keywords

AI in Education, metaphors, ethnography in education, open education, humanistic theory, fiction.

Citation:

Costello, E., Ferreira, G., Hrastinski, S., McDonald, J.K., Tlili, A., Veletsianos, G., Marín, V.I., Huijser, H. & Altena, S. (2025). Artificial Intelligence in Education Research and Scholarship: Seven Framings. *Journal of University Teaching and Learning Practice*, 22(3). <https://doi.org/10.53761/xs5e3834>

Introduction

“What one proposes to do about something reveals what one thinks is problematic (needs to change)” (Bacchi, 2012, p. 21).

The words you are reading right now were written by a human being. Moreover, they are offered to you freely through a fully open-access journal that is not owned or controlled by a big commercial publishing oligopolist. Your attention is drawn to these two facts as opening frames of reference because educational research is not just concerned with the production of knowledge, but also with the collection of people who are the stewards of that process and the politics and power that enable or constrain it. In this piece, we present seven lenses through which researchers can pose questions about how AI impacts education as a project of knowledge sharing, creation and contestation. A comprehensive survey or research agenda is not offered here - for more of that, see the editorial by Fitzgerald et al. (2025) in this journal. Instead, we present a diverse “carrier bag” of problem areas, approaches and framings that include Metaphors of AI in Education (AIED); methodological pluralism; fiction as research method; ethnographic representations of AI construction; Open Education and AI entanglements; the role of third-space professionals in AIED research; and humanistic positive psychology and AI chatbots. These briefs, authored by different researchers, are intended to show different ways AI’s role or impact can be framed. It is up to others to take up these frames, put portraits in them and twist them this way and that to decide which way they should be hung. The portraiture may be conducted by new and emerging scholars seeking ideas, or by more experienced but slightly burnt-out researchers needing inspiration to recover from AI overexposure. In either case, the point to remember is that framings are important, that we need good ideas to have ideas with, that “it matters what stories we tell to tell other stories with” (Haraway, 2016, p. 12).

We begin with a call for methodological pluralism in AIED research. This also makes the implicit point that AI itself is plural, that there are many AIs and we should always be concerned not just with what is AI but who gets to say so and why (Bender & Hanna, 2025). Moreover, in the case of research, we must ask: *how do we get to say what AI is?* We detail several such ‘hows’ here. Research may be ethnographic accounts of how we live educational technologies. Research may be conducted through development and analysis of fictions that draw attention more vividly to pressing classroom concerns than neutral but neutered sets of facts. They may draw on metaphors as teaching and communicative devices that simultaneously illuminate and elide (Bender & Gebru et al., 2021), operating powerfully within discourses of educational policy and practice. We highlight how learning designers, academic developers, and educational technologists can have roles to play as participants and researchers. We highlight how they not only connect and entangle students, teachers and technology but also acquire unique perspectives and skills in such joinery.

The opportunity cost of AI is high. Time spent disabling consentless technologies that intrude into spaces where they were never invited, and battling discourses of AI inevitability and unconditional adoption, is time that could have been invested elsewhere. But we also need education’s enemies. We need to challenge the openwashing of OpenAI. Indeed, “if everything were free, easy, and open, what would we struggle for or with?” (MacKenzie et al., 2021). Open educational approaches call attention to access to education, to resistance to its commercialisation and to inclusivity and criticality of practices (Cronin, 2017). Most educational technology research is still

locked up behind commercial paywalls after all (Costello, 2019; Costello, Farrelly & Murphy, 2020).

In one detailed study, as little as 1% of research on AI has been found to consider its potential harms (Birhane et al., 2022). Hence, the “Weizenbaum test for AI” (Stilgoe, 2023), that asks whether it is useful and whether it is good, should always be applied in education. Yet what originally motivated Weizenbaum to create the first chatbot, ELIZA, was his belief that although we engage with technology and become entangled with it, we also somehow remain uniquely and distinctly human. He hoped that Rogerian psychological principles such as empathy and active listening, long standing in education (Rogers, 1962), could be applied to human-computer interactions fostering a sense of connection and reflection. Whilst, in a post-human sense, we are fundamentally interdependent on each other and the world around us (Bayne, 2015a), we are also unique, special and worthy as individuals. Preserving this sense of individual worth is essential if we are to continue questioning the value and relevance of humanism. Human beings, after all, wrote these very words for you. Yes, we are paid for this work, but we also take undeniable, unique and special human satisfaction in the academic practice of developing and sharing our ideas. We hope you likewise enjoy reading them.

Method

The seven ideas introduced above - methodological pluralism, ethnography, metaphors, fiction, third space professionals, open education and humanism - are variously theories, tools, approaches and areas of study. Scholars and practitioners need access to all of these. While systematic or structured research reviews and proposals for research agendas usefully establish either, fixed windows onto specific studies in the case of the former, or generalised sets of guidelines in the latter, their purpose is not to provide examples. To address this gap this article offers a “carrier bag” of ideas. These are necessarily idiosyncratic, situated in our research and teaching practices as a collective of authors who work in overlapping areas of a diverse educational landscape. In and from this landscape we see AI as but one amongst many types of object we can collect in a pedagogical carrier bag. The carrier bag theory of human evolution posited by Fisher and expanded to fiction by Ursula K le Guin (1996, p. 3), resists “hero narratives” of technologies as weapons of domination. It argues instead that small bags used in the practice of foraging are as powerful as pointed weapons which tend to dominate technological narratives. Proceeding from this theoretical frame we adopted a practice of collective writing. Collective writing as a methodology can vary according to the number of authors, the time involved and the ultimate purpose. Following Jandrić et al. (2023), but with condensed time for review and inter-author revisions, writing was conducted in a sprint over the summer of 2025 using a shared Google doc. The first author led the ideation of an initial list of topics. The group discussed topics, agreed the final set and worked on their sections in the shared document which helped authors avoid overlap and attempt to find continuities. The contributions were then lightly edited by the first author and arranged into order of most general to most specific. The sections have undergone much evolution since the first drafts, in addition to detailed and insightful feedback from two reviewers. A tension of collective writing is the degree of ownership each author takes of their piece and how much writing the tone and style is harmonised as these can have consequences for the reader with risks that the text becomes either a disjointed patchwork on one hand, or overly homogenised and objective on the other and we return this issue in the conclusion. The original lead authors of each section were: methodological pluralism - George Veletsianos; ethnography

- Jason K. McDonald; metaphors - Giselle Ferreira; fiction - Stefan Hrastinski; third space professionals - Henk Huijser and Sharon Altena; open education - Victoria I. Marín; humanism - Ahmed Tlili.

Framings of Artificial Intelligence in Higher Education

Methodological Pluralism

The discourses surrounding AI in education too often swing between extremes, either heralding a technological utopia where every educational challenge is resolved or prophesying a dystopian future of human irrelevance. Learning Technologies research must instead complicate these conversations and ground them in the realities of how people encounter and experience these tools.

Rather than perpetuating simplistic narratives, our research should illuminate the plurality and messiness of the ways in which emerging technologies are used in education (Veletsianos, 2010, 2016, 2020). This requires confronting the uncomfortable truth that educational technology research has historically maintained a cozy relationship with technology advocacy (Bayne, 2015b; Kirkwood & Price, 2014). Yet expanding the use of digital tools is not, and should not be, our primary scholarly aim. The more pressing questions are: Who benefits from AI in education? Who gets left behind? And crucially, why?

To develop a full picture of the ways in which AI is used and experienced in education, along with its impacts, intended, and unintended consequences, we need research that examines not just whether AI is used, but how and why it's adopted (or rejected) across diverse contexts. This means studying learners' and educators' everyday encounters with AI across the full educational spectrum: K-12 classrooms, university lecture halls, online environments, informal learning spaces, professional training environments, and community settings. Such studies should account for geographic, cultural, and disciplinary contexts because they matter profoundly (Berliner, 2002).

Such ambitious scope demands methodological pluralism. Interpretive approaches, ranging from ethnography to phenomenology to discourse analysis, can reveal why and how learners engage with AI in particular ways, uncovering motivations and barriers that quantitative metrics alone might miss. These insights can inform more ethical, human-centered design. At the same time, purely qualitative approaches might miss patterns at scale. Computational and data science methods can help researchers make sense of vast datasets of user-AI interactions. And that is one of the challenges facing future educational technology research: meaningfully integrating multiple methodological lenses to construct a richer and more complete picture of AI's evolving role in education.

Problematising through Metaphors

One fruitful way of problematising AI in Education is through the use of metaphor, which can be conceived as both a cognitive device for learning and as part of the theoretical grounding from which research questions can be asked. Viewed as “condensed analogies” (Perelman & Olbrechts-Tyteca, 2008, p. 671), metaphors have been traditionally used as pedagogical tools to support teaching and as a way for educational researchers to frame theory and practice.

Interestingly, EdTech and, more recently, AI discourses are besieged with metaphors that, taken together, hark back to ways of thinking about teaching and learning that may be hundreds of years old (Ferreira et al., 2023). This reliance on traditional metaphors may come as a surprise to those who view digital technologies as inherently innovative. Critically analysing the metaphors used to frame AI reveal how AI is conceptualised and how education is imagined – surfacing assumptions about pedagogy, the learner and the role of teachers.

Crucially, metaphors “are always a double bind: they at once allow us to see and stop up our abilities to notice” (Hejnol, 2017). In other words, metaphors encapsulate conceptions, value judgments and beliefs, thus opening specific avenues for thought and evaluation whilst concealing others. In this sense, metaphors create specific ways of seeing, acting, and being, but they may also fuel imagination. Critical and creative uses of metaphor, in particular, may help us to understand AI and its effects on education, and establish new ways of thinking about teaching, learning and education as a whole (Ferreira et al., 2025).

In a broader, history-informed perspective, AI may be seen as the latest amongst a series of so-called “innovations” in EdTech, accompanied by discourses that attempt to shift our attention from one label to the next (Selwyn, 2016), usually with recourse to hyperboles and personification. Guidance documents on the uses of GenAI in education produced by multilateral organizations, for example, tend to reproduce the type of technological determinism and solutionism that is practically hegemonic in EdTech talk, using metaphors that anthropomorphize AI and, thus, make it more personable (Heinsfeld & Veletianos, 2025) and easier to be unsuspectingly peddled, which is consistent with previous waves of technological invention (Ferreira et al., 2020). What becomes clear from this is that, like all of EdTech, AIED needs to be approached in ways that bring to the fore the historical roots of artefacts and question the ways of talking about them, thus creating opportunities to reexamine the belief of AI as inevitable, which supports instrumental and apocalyptic perspectives alike.

Also, it is important to recognise that, perhaps, problems already given may have to be reframed, as problematisation is a problem in itself (Schon, 1983). For example, Selwyn (2025, p. 7) hypothesizes that current AI products that are surrounded by strong hype may fade, with their underlying technology “baked into all of the mundane everyday software and platforms that we are now utterly reliant on”. He thus argues that a shift in focus from AI as standalone devices to AI as a means to automate learning environments may be essential, suggesting “the idea of AI being ‘used by’ students and teachers isn’t helpful – we need to worry much more about how AI is being ‘used on’ students and teachers.” (Selwyn, 2025, p. 8). This implies that we may have to look at questions that actually pre-date the advent of current AI systems.

In this vein, it may be helpful to look back at recent concerns with plagiarism, perhaps an issue soon to become a non-problem due to GenAI. Higher Education is divided on how to tackle the question of student use of AI in assignments. Outright rejection and prohibition appear useless since AI is thought of as inevitable in the sense that students (and their teachers) will use it (or *will have to use it* in some imaginary future), regardless of the guidance offered by institutions, to help them to write their essays, project proposals and even e-mails. From this perspective, the “solution” presents itself in the shape of a burgeoning market of AI detection platforms, reminiscent of what emerged around plagiarism detection. In this context, detection platforms are

poised as the required “support” for teachers and institutions in awe (fear?) of the assumed power of LLMs. On the other hand, the already expanding area of “prompt engineering” is positioned to help users to circumvent all sorts of pitfalls already picked up by detectors. It all seems to operate according to a “business as usual” rationale on what could be described as a “Bootleg” industry of fabricated solutions to fabricated problems. This has led some to the conclusion that GenAI is in many ways antithetical to, and incompatible with, the project of higher education itself such that “not using AI in education becomes an act of resistance that reasserts the primacy of human values and critical thinking” (Monett & Paquet, 2025).

Ethnographic Study of AI in Education

In a recent critique of the current state of educational technology research, Schmidt et al. (2025) argued that the current enthusiasm for generative AI mirrors that given to teaching machines in the mid-part of the 20th century. They appropriately called this a “bandwagon” effect and noted that even if bandwagon topics merit some study, “the excessive interest our scholarly community gives to them cannot but be distracting and potentially drown out discussion on other topics that matter.” To drive the point home, they questioned: “How many journals in our field need a special issue on the impacts of AI?..._How many special sessions at professional organizations’ conferences are warranted by these techno-fads” (p. 524)? To this we add: how many topics are being ignored because scholars’ attention is diverted away from them by the allure of AI? Indeed, this issue becomes more relevant if one takes seriously the critique of creatives like Charlie Brooker (creator of the dystopian series *Black Mirror*) that the real problem with artificial intelligence is not whether it works or not, but that even if it does work, it is simply “boring” (as quoted in Schimkowitz, 2023).

However, this observation raises a question about AI that promises to not only be insightful about its own use in education but also help us better understand the ever-recurring, endless hype cycle that educational technology is caught in (McDonald & Ventura, 2025). What might we learn from an ethnographic study of AI in education, not focused on the relatively mundane questions of adoption, or effects on student grades, but on the deeper issues of educational technology hype itself? Technology hype is not a self-evident concept. We seem to treat it as if we know what it is, but the fact that it keeps recurring, despite our sometimes-condescending lectures that technology is just a tool, suggests that we have much to learn about what hype itself is, and why it keeps occurring. Indeed, the fact that we can look back on previous technology hypes so critically, while at the same time convincing ourselves that this time it is going to be different, is quite strong evidence that we do not understand hype at all. We, therefore, call for research based on deep, extended observation and participation that tells us something about our own tendencies to adopt technologies so uncritically (Packer, 2018) and particularly collective autoethnographies that focus on contrasting localised practices to inform international ones.

Imagining Futures through Fiction

Woke up too late again. A quick cup of coffee, then time to face the mountain of math backlog waiting on the uni platform. Just one more week until grades are finalized. I do not mind math, really, but it gets so repetitive watching all those videos and doing the exercises. The uni platform tracks it all: every gaze, every

click. No need for exams, though. Still, it's a lot of work, but at least the grade will be fair.

I heard students used to sit in lecture halls for hours, just listening to professors talk. Seems like such a waste of time. At least our classes focus on the exercises students struggle with the most. But the platform usually explains things more clearly, so I often skip them.

This brief vignette, written for this piece, is not a prediction. It presents just one of many possible futures for AI in higher education, for good and for bad. Its purpose is to prompt reflection. Different readers will interpret it differently. At best, it encourages you to consider what kind of future you would or would not want for AI in higher education. The future is not something predetermined that is waiting to be discovered; it is something we create.

The rhetoric surrounding AI often promotes ideas that sound appealing. Who would not want education tailored to individual needs or a constantly available tutor? However, what would higher education look like if such visions were fully integrated into university systems? What would classrooms become? What roles would faculty play? What would a typical day in the life of a student entail? These are questions that few are asking. To explore them, we can turn to speculation (Ross, 2023), open up dialogue, and engage those most affected, in this case, faculty and students (Hrastinski, 2025).

Education fiction allows us to act in the present by imagining possible futures (Hrastinski, 2025). While the vignette above is speculative, such fiction can also draw on research, for instance, by using empirical data as the basis for writing short stories and vignettes (Costello et al., 2023; Veletsianos et al., 2024), or by involving participants directly in story writing (Flynn et al., 2023; Teräs et al., 2024). This approach can make research more emotionally engaging and accessible, beyond simply reporting data (Winter, 1986). Education fiction seems particularly useful for critically exploring complex socio-technical developments, such as the future role of AI in education (Bayne & Ross, 2024; Cox, 2021; Selwyn et al., 2020). Moreover, using fiction is a powerful practical strategy for both teaching and learning that can foster critical and technoskeptical thinking in students and give educators creative tools with which to discuss complex and often difficult topics around AI's influence (Krutka et al., 2021).

Humanistic Grounding in AI Design and Development

With the continuous debate of how AI should be designed and developed generally or in education, it is crucial to always look for something that defines us (the AI users), humans. To keep hope in humankind to strive for a more inclusive, equitable, and sustainable world, AI should be grounded in humanistic theory. The Humanistic theory views people as fundamentally good and possessing the capacity for positive growth and self-improvement (Maslow, 1943; 1968; Rogers, 1962). Yang et al. (2021) emphasized the need for designing AI algorithms with humanity as the main consideration, which requires continuous adjustments of AI algorithms through human context and societal phenomena to augment human intelligence. Tasioulas (2022) further stressed the need for considering humanistic ethics, which shift the focus from the outcomes that AI can achieve to the procedures through which it does. From an organizational perspective, the UNESCO consensus also affirms a humanistic approach to designing and developing AI technologies in education for augmenting human intelligence, protecting human rights and for

promoting sustainable development through effective human-machine collaboration in life, learning and work (UNESCO, 2021). Therefore, the complex human entity should be addressed when designing and developing AI-powered systems in education. This implies that AI-powered systems must not view learners as only some log data represented in some dashboards. By incorporating factors, including psychological, affective, and cognitive as well as well-being indicators into AI-powered systems, we can create more comprehensive and user-centered solutions that address the diverse needs of learners (Mustafa et al., 2024).

While the humanistic grounding can help build AI-powered systems in education that contribute to the well-being, growth, and personal development of learners, several questions persist that researchers should investigate in the future; Which humanistic principles should be considered when designing and developing AI-powered systems in education? Are these principles being violated and at which level? What principles from humanistic psychology can we draw on to recognise the uniqueness of each person, the fundamental capacity for human goodness and how these are sustained, promoted or eroded by AI-powered systems in education?

Third space professionals in AI educational research

The dynamic and accelerated rate of AI-driven technological changes, and the increasing ubiquity of AI permeating all aspects of life, have significant implications for learning and teaching within universities. As we are writing, OpenAI has just introduced ChatGPT agent, which it claims:

...allows ChatGPT to complete complex online tasks on your behalf. It seamlessly switches between reasoning and action—conducting in-depth research across public websites, uploaded files, and connected third-party sources (like email and document repositories), and performing actions such as filling out forms and editing spreadsheets—all while keeping you in control. (OpenAI, 2025, n.p.)

This is not the place to discuss the tenuous claim about “keeping you in control”, but our point here is that each time the goal posts shift in the Gen AI space, there is a need to rethink critical research areas. Bearman et al. (2023) reported that AI educational research to date has been overly technical, focussed on specific applications, lacking definitional clarity and largely ignoring social and ethical considerations. Furthermore, there is “limited discussion of how teachers might work with AI-powered technologies beyond concrete applications or how teachers might inform future AI development” (Bearman et al., 2023 p. 380). However, this focus on “teachers” needs to be broader to also consider other actors in universities who contribute to learning and teaching. Lodge et al. (2023), in response to the emergence of ChatGPT, mapped out a research agenda for GenAI identifying five critical research areas: sensemaking, assessment integrity, assessment redesign, learning and teaching with AI, and ethics and AI, while Bearman et al. (2023) further identified the language of AI, accountability and labour, and moving beyond single AI innovations in learning and teaching as areas of potential focus. More recently, other scholars have identified additional priority research areas including appropriate levels of use of GenAI in learning, personalisation versus standardisation, and the student-teacher relationship (Bozkurt et al., 2024; Xiao et al., 2025).

This raises the question of who in universities are best placed to contribute to these dynamic AI research agendas, particularly when exploring practice-based approaches and interventions. This is where third space professionals come into the frame. Whitchurch (2015) defines third space

professionals as university staff who “do not fit conventional binary descriptors such as those enshrined in ‘academic’ or ‘non-academic’ employment categories” (p. 79). This includes roles that support learning and teaching within universities such as learning designers, academic developers and learning technologists (McIntosh & Nutt, 2022; Simpson, 2025). Positioned at the nexus of learning, teaching and technology within universities, they are crucial knowledge holders and sense makers, uniquely positioned to provide invaluable contributions to the research agenda as researchers, co-researchers, or research subjects. The daily work of these change agents spans many of the identified critical research areas in AI, and they could therefore have a strategic and potentially transformational role to play in shaping AI adoption and use in higher education.

Thus, we could identify the third space as a crucial reactive and proactive site for AI-focused research and practice. From within this third space, these learning and teaching professionals add value and help discipline-based academics to reimagine assessment design, grading, student support and their learning and teaching in the context of the constantly changing AI higher education environment. Importantly, the practice insights of third space learning and teaching professionals have the potential to shape a more grounded, inclusive research agenda. Already we are seeing the emergence of research written about AI and third space professionals, or by third space professionals themselves (e.g. Kumar et al., 2024; Huijser et al., 2024; Martin et al., 2025; and Kelly et al., 2025).

It is for this reason that these professionals can add considerable value to how the AI research agenda is conceptualised, designed and enacted, as this will provide the higher education sector with a stronger and constantly evolving evidence base to inform not only third space practice, but by extension learning, teaching, and assessment in a more general sense, which can ultimately only benefit the outcomes for students.

Entanglement of Open Education and AI

Open Education builds bonds with critical pedagogy and has been “given many meanings: access, flexibility, equity, collaboration, agency, democratisation, social justice, transparency, and removing barriers” (Zawacki-Richter et al., 2020, p. 321). These are desirable purposes that entail specific values in education. But how does AI fit here? In this piece we call for research on an entangled pedagogy drawing from sociomaterial and post digital approaches to study key relations within educational practice (Fawns, 2022). In entangled pedagogy, technology and AI as one of the options and methods, e.g. open pedagogy would be two elements that are interdependent, along with context, values and purpose within complex pedagogical activity, for instance, an Open Educational Practice (OEP).

The potential of AI to support digital public goods and inclusive knowledge-sharing and to enable sustainability has been emphasised in the Dubai Declaration on Open Educational Resources (OER, 2024). However, it also raises challenges (e.g., algorithmic bias, digital divide expansion and over-reliance on proprietary AI models) that may undermine the values that OER ecosystems entail (e.g. openness). AI potential and challenges come along and need to be considered in an entangled relation with open pedagogy, context, values and purpose in educational practice. Studies that go beyond the analysis of solely one of the elements (e.g., degree of acceptance of AI by students and faculty) and consider the holistic and complex relations within an OEP or any

other educational activity (e.g., cultural and geographical context, institutional policies, stakeholders' involvement, etc.), are needed.

Several challenges, entanglements and tensions were highlighted at the Open Education Conference 2025, which carried the motto "*Speaking Truth to Power: Open Education and AI in the Age of Populism*", and these deserve further investigation. One key issue concerns the use of open licensing, such as Creative Commons, and (re)use of existing OER at a time when content is easily generated by generative AI, without reference to the aggregated sources used to produce the output. As Nascimbeni asked in Bozkurt et al. (2023), "in a world where machines will be able to instantly design learning activities and produce learning content, reusing basically all the available resources on the web, what will be the new meaning of "open"?" (p. 98). Further research is needed both on this evolving notion of openness in the context of education, and on how AI systems could ensure integrity and lawful use of OER (Kimmons et al., 2025).

The creation of new openly licensed content using Gen AI is considered, on the other hand, a potential (UNESCO, 2024). However, this action needs to be studied in the context of pedagogy, but also in which conditions and why, as well as what the values behind are. For instance, issues such as educators' recognition, and quality of content, among others, may be considered in research linked to OEP related to teacher-centred OER production. In the work of Panke (2024), there is an exploration of the intersection of open pedagogy and artificial intelligence in two course concepts where students create open textbooks, podcasts and other audiovisual content. Educators' and students' perspectives on these different kinds of OEP could be usefully studied in their contexts, considering how AI changes the way open pedagogy is carried out and vice versa, where context, purpose and values interact. Implications of AI integration in OEP in specific contexts need to be studied; the entanglement of technology is an ethical issue too, not only a pedagogical one (Fawns, 2022).

On the other hand, despite the emphasis on AI potential to address OER accessibility and translation (Miranda et al., 2025; UNESCO, 2024), there is still scant research studying this issue. What are the best ways AI could enhance OER accessibility and how it interests with open pedagogy, considering purpose, context and values? Here universal design for learning and concerns about content biases should be considered. Finally, the issue of critical and equitable approaches in OEP and OER vs. popular AI narratives of productivity and personalisation of education (Holmes et al., 2025; Monett & Paquet, 2025) is also a relevant one, which has still to be studied. Can these approaches be reconciliated? If so, how? All in all, there is space to keep us questioning as researchers and practitioners in higher education: How is Open Education, and concretely OER and OEP, transformed when entangled with AI? How the use of AI changes when applying an open pedagogy? What are the implications in this relation to OEP regarding context, purpose and values as part of this entanglement?

Conclusion

We have presented several frames, approaches, and ideas here for others to take up and use in AI in education research. However, to be clear, we are not advocating for the study of AI in education research per se. As researchers, we pay the opportunity cost of working on AI externalities and battling through the hype when we have many other varied research interests.

What each idea should do here, as you take it up, is help you in some way to connect research on AI to the overarching aims of education itself, which exists both in entanglement with, but also prior to, and after, whatever it is we now call AI (Fawns, 2022). It is hard to argue against the definitional clarity and concision of Bender and Hanna (2025), who draw on their work and deep expertise to say, “AI is automation.” For this reason, we are also not advocating for aspects of AI itself as inherently beneficial or useful for education. Indeed, if anything, a preponderance of these frames and ideas are circumspect about the overall value of AI in education and highlight its potential harms. Our call is for research that widens the conversation on AI so we see it through different lenses and frames. As a collective piece of writing, there may inevitably be clashes of styles and opinions here between each sub-section. We may not agree on everything. Hopefully, we even disagree. Such dissensus and diversity are useful. They remind us of the messiness of the collaborative activities of both teaching and research, that they are never entirely determinate practices and always have passionate human beings at their heart.

Acknowledgements

The author(s) disclose(s) that they have no actual or perceived conflicts of interest. The author(s) disclose(s) that they have not received any funding for this manuscript beyond resourcing for academic time at their respective university. The author(s) have not used artificial intelligence in the ideation, design, or write-up of this research. The author(s) confirm(s) that they have met the ethical standards expected. The authors list the following CRediT contributions: Eamon Costello lead the conceptualisation and the writing. The following authors lead the writing of each section: methodological pluralism - George Veletsianos; ethnography - Jason K. McDonald; metaphors - Giselle Ferreira; fiction - Stefan Hrastinski; third space professionals - Henk Huijser and Sharon Altena; open education - Victoria I. Marín; humanism - Ahmed Tlili. Eamon Costello was the lead editor of the writing.

References

- Bacchi, C. (2012). Introducing the 'What's the Problem Represented to be?' approach. Engaging with Carol Bacchi: Strategic interventions and exchanges, 21-24. in Eds Bletsas, A., & Beasley, C. *Engaging with Carol Bacchi. Strategic interventions and exchanges*. University of Adelaide Press. <https://doi.org/10.1017/UPO9780987171856.003>
- Bayne, S. (2015a). What's the matter with 'technology-enhanced learning'? *Learning, media and technology*, 40(1), 5-20. <https://doi.org/10.1080/17439884.2014.915851>
- Bayne, S. (2015b). Teacherbot: interventions in automated teaching. *Teaching in Higher Education*, 20(4), 455-467. <https://doi.org/10.1080/13562517.2015.1020783>
- Bayne, S., & Ross, J. (2024). Speculative futures for higher education. *International Journal of Educational Technology in Higher Education*, 21(39). <https://doi.org/10.1186/s41239-024-00469-y>
- Bearman, M., Ryan, J., & Ajjawi, R. (2023). Discourses of artificial intelligence in higher education: A critical literature review. *Higher Education*, 86(2), 369-385. <https://doi.org/10.1007/s10734-022-00937-2>
- Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021, March). On the dangers of stochastic parrots: Can language models be too big?. In *Proceedings of the 2021 ACM conference on fairness, accountability, and transparency* (pp. 610-623). <https://doi.org/10.1145/3442188.3445922>
- Bender, E. M., & Hanna, A. (2025). *The AI Con: How to fight big tech's hype and create the future we want*. Random House.
- Bender, E. M., Costello, E., Farrow, R., Lee, K. & Ferreira, G. (2025) Unsafe AI for Education: A conversation on stochastic parrots and other learning metaphors. *Journal of Interactive Media in Education*
- Berliner, D. C. (2002). Comment: Educational research: The hardest science of all. *Educational researcher*, 31(8), 18-20. <https://doi.org/10.3102/0013189X031008018>
- Birhane, A., Kalluri, P., Card, D., Agnew, W., Dotan, R., & Bao, M. (2022, June). The values encoded in machine learning research. In *Proceedings of the 2022 ACM conference on fairness, accountability, and transparency* (pp. 173-184). <https://doi.org/10.1145/3531146.3533083>
- Bozkurt, A., Gjelsvik, T., Adam, T., Asino, T. I., ... & Zawacki-Richter, O. (2023). Openness in Education as a Praxis: From Individual Testimonials to Collective Voices. *Open Praxis*, 15(2), 76–112. <https://doi.org/10.55982/openpraxis.15.2.57>
- Bozkurt, A., Xiao, J., Farrow, R., Bai, J. Y., ... Asino, T. I. (2024). The manifesto for teaching and learning in a time of generative AI: A critical collective stance to better navigate the future. *Open Praxis*, 16(4), 487-513. <https://doi.org/10.55982/openpraxis.16.4.777>
- Costello, E. (2019). Bronze, free, or fourrée: An open access commentary. *Science Editing*, 6(1), 69-72. <https://doi.org/10.6087/kcse.157>
- Costello E., Welsh S., Girmé P., Concannon, F., Farrelly, T., & Thompson, C. (2023). Who cares about learning design? Near future superheroes and villains of an educational ethics of care. *Learning, Media and Technology*, 48(3), 460–475. <https://doi.org/10.1080/17439884.2022.2074452>
- Costello, E., Farrelly, T., & Murphy, T. (2020). Open and Shut: Open Access in Hybrid Educational Technology Journals 2010 – 2017. *The International Review of Research in Open and Distributed Learning*, 21(1), 113–134. <https://doi.org/10.19173/irrodl.v20i5.4383>

- Cox, A. M. (2021). Exploring the impact of Artificial Intelligence and robots on higher education through literature-based design fictions. *International Journal of Educational Technology in Higher Education*, 18(3). <https://doi.org/10.1186/s41239-020-00237-8>
- Cronin, C. (2017). Openness and praxis: Exploring the use of open educational practices in higher education. *International Review of Research in Open and Distributed Learning*, 18(5), 15-34. <https://doi.org/10.19173/irrodl.v18i5.3096>
- Fawns, T. (2022). An entangled pedagogy: Looking beyond the pedagogy—technology dichotomy. *Postdigital Science and Education*, 4(3), 711-728.
- Ferreira, G., Costello, E., Farrow, R., & Lee, K. (2025). Metaphors of AI in education: Discourses, histories and practices. *Journal of Interactive Media in Education*.
- Ferreira, G., Lemgruber, M. S., & Cabrera, T. L. (2023). From didachography to AI: Metaphors teaching is automated by. *Journal of Interactive Media in Education*, 2023(1). <https://doi.org/10.5334/jime.798>
- Ferreira, G. M. S., Rosado, L. A. S., Lemgruber, M. S., Carvalho, J. S. (2020). Metaphors we're colonised by? The case of data-driven educational technologies in Brazil. *Learning, Media and Technology*, 45(1) 46-60. <https://doi.org/10.1080/17439884.2019.1666872>
- Fitzgerald, R., Kumar, J. A., Roe, J., Roehrer, E., & Yang, J. (2025). Framing the future: A research agenda for AI in higher education. *Journal of University Teaching and Learning Practice*, 22(3). <https://doi.org/10.53761/jwt7ra63>
- Flynn, S., Byrne, J., Devoy, M., Johnston, J., Lowney, R., Magee, E., Molloy, K., Moloney, D., Munro, M., Ongolly, F., Ryan, J., Stone, S., Waters, M., & Wright, K. (2023). "Vibrant, open and accessible": Students' visions of higher education futures. In C. Cronin & L. Czerniewicz (Eds.), *Higher education for good*. Open Book Publishers. <https://doi.org/10.11647/OBP.0363>
- Haraway, D. J. (2016). *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press. <https://doi.org/10.1515/9780822373780>
- Heinsfeld, B.D., & Veletsianos, G. (2025) The Language on GenAI: A Critical Exploration of Personification Metaphors in UNESCO's Guidance for Generative AI in Education and Research. *Journal of Interactive Media in Education*.
- Hejnal, A. (2017). Ladders, trees, complexity, and other metaphors in evolutionary thinking. In: Tsing, A., Swanson, H., Gan, E. and Burbandt, N.(Eds). *Arts of living on a damaged planet*. Minneapolis: University of Minnesota Press.
- Holmes, W., Mouta, A., Hillman, V., Schiff,... & Yeo, B. (2025). Critical Studies of Artificial Intelligence and Education: Putting a Stake in the Ground. SSRN. <https://dx.doi.org/10.2139/ssrn.5391793>
- Hrastinski, S. (2025). Fiction in research: The case of education fiction. *Policy Futures in Education*. <https://doi.org/10.1177/14782103251343331>
- Huijser, H., Doherty, I., & Willems, J. (2024). *Upskilling academics for Gen AI: The role of third space workers* In T. Cochrane, V. Narayan, E. Bone, C. Deneen, M. Saligari, K. Tregloan, & R. Vanderburg, Navigating the Terrain: Emerging frontiers in learning spaces, pedagogies, and technologies. Proceedings ASCILITE 2024, Melbourne. <https://doi.org/10.14742/apubs.2024.1509>
- Jandrić, P., Luke, T. W., Sturm, S., McLaren, P., ... & Gibbons, A. (2023). Collective Writing: The Continuous Struggle for Meaning-Making. In: Jandrić, P., MacKenzie, A., Knox, J.

- (eds) *Postdigital Research. Postdigital Science and Education* . Springer, Cham.
https://doi.org/10.1007/978-3-031-31299-1_14
- Kelly, A., Strampel, K., & Lynch, A. (2025). Reconceptualising the role of academic language and learning advisers in the artificial intelligence age. *Journal of University Teaching and Learning Practice*, 22(2), 1-22. <https://doi.org/10.53761/7vvt5q37>
- Kimmons, R., Veletsianos, G., & Trust, T. (2025). Judicious AI Use to Improve Existing OER. The AI + Open Education Initiative. Retrieved from
<https://aiopeneducation.pubpub.org/pub/bl09sl1d>
- Kirkwood, A., & Price, L. (2014). Technology-enhanced learning and teaching in higher education: what is 'enhanced' and how do we know? A critical literature review. *Learning, media and technology*, 39(1), 6-36. <https://doi.org/10.1080/17439884.2013.770404>
- Krutka, D. G., Caines, A., Heath, M. K., & Willet, K. B. S. (2021). Black Mirror Pedagogy: Dystopian Stories for Technoskeptical Imaginations. *The Journal of Interactive Technology and Pedagogy*, 11(1). <https://jitp.commons.gc.cuny.edu/black-mirror-pedagogy-dystopian-stories-for-technoskeptical-imaginations/>. Accessed 18 May 2022.
- Kumar, S., Gunn, A., Rose, R., Pollard, R., Johnson, M., & Ritzhaupt, A. D. (2024). The role of instructional designers in the integration of Generative Artificial Intelligence in online and blended learning in higher education. *Online Learning*, 28(3), 207-231.
<https://doi.org/10.24059/olj.v28i3.4501>
- Le Guin, U. K. (1996). The carrier bag theory of fiction. *The ecocriticism reader: Landmarks in literary ecology*, 149-154.
- Lodge, J. M., Thompson, K., & Corrin, L. (2023). Mapping out a research agenda for generative artificial intelligence in tertiary education. *Australasian Journal of Educational Technology*, 39(1), 1-8. <https://doi.org/10.14742/ajet.8695>
- MacKenzie, A., Bacalja, A., Annamali, D., Panaretou, A., ... & Gourlay, L. (2021). Dissolving the Dichotomies Between Online and Campus-Based Teaching: a Collective Response to *The Manifesto for Teaching Online* (Bayne et al. 2020) (2021). *Postdigital Science and Education*, 4(2), 271–329. <https://doi.org/10.1007/s42438-021-00259-z>.
- Martin, F., Kim, S., Bolliger, D. U., & DeLarm, J. (2025). Assessment Types, Strategies, and Feedback in Online Higher Education Courses in the Age of Artificial Intelligence: Perspectives of Instructional Designers. *TechTrends*, 1-17.
<https://doi.org/10.1007/s11528-025-01115-8>
- Maslow, A. H. (1943). A theory of human motivation. *Psychological review*, 50(4), 370.
- Maslow, A. H. (1968). *Toward a psychology of being* (2nd ed.). New York: D. Van Nostrand.
- McDonald, J. K., & Ventura, B. (2025). Is education better because of us? How ed tech can answer the call to produce research that matters. *Journal of Computing in Higher Education*, 37(2), 543–560. <https://doi.org/10.1007/s12528-025-09440-w>
- McIntosh, E., & Nutt, D. (2022). *The impact of the integrated practitioner in higher education: Studies in third space professionalism*. Routledge. <https://doi.org/10.4324/9781003037569>
- Miranda, J., Freudenreich, J., Schneider, M., & Glasserman-Morales, L. D. (2025). Design for Sustainability of Open Education Resources in the Era of AI: A Case Study. *IEEE Revista Iberoamericana de Tecnologías del Aprendizaje*.
<https://doi.org/10.1109/RITA.2025.3599123>
- Monett, D., & Paquet, G. (2025). Against the Commodification of Education—if harms then not AI. *Journal of Open, Distance, and Digital Education*, 2(1)
<https://doi.org/10.25619/wazgw457>

- Mustafa, M. Y., Tlili, A., Lampropoulos, G., Huang, R.,... & Saqr, M. (2024). A systematic review of literature reviews on artificial intelligence in education (AIED): a roadmap to a future research agenda. *Smart Learning Environments*, 11(1), 59.
<https://doi.org/10.1186/s40561-024-00350-5>
- OpenAI. (2025). *ChatGPT agent*. <https://help.openai.com/en/articles/11752874-chatgpt-agent>
- Panke, S. (2024). Open Educational Resources and Artificial Intelligence for Future Open Education. *Mousaion*, 42(1). https://hdl.handle.net/10520/ejc-mousaion_v42_n1_a5
- Packer, M. (2018). *The science of qualitative research*. Cambridge University Press.
- Perelman, C and Olbrechts-Tyteca, L. (2008). *The new rhetoric: A treatise on argumentation*. Translated by John Wilkinson and Purcell Weaver. Centre for the Study of Democratic Institutions. Notre Dame, Indiana: University of Notre Dame Press.
- Rogers, C. R. (1962). The interpersonal relationship: The core of guidance. *Harvard Educational Review*, 32(4), 416–429.
- Ross, J. (2023). *Digital Futures for Learning: Speculative Methods and Pedagogies*. New York: Routledge.
- Schimkowitz, M. (2023). Black Mirror creator doesn't fear AI because it's "boring," "derivative." *AV Club*. <https://www.avclub.com/black-mirror-ai-because-it-s-boring-1850938503>, accessed 28 July, 2025.
- Schmidt, M., McDonald, J. K., & Moore, S. (2025). The research we don't need will persist until we dismantle the systems that sustain it. *Journal of Computing in Higher Education*, 37(2), 507–542. <https://doi.org/10.1007/s12528-025-09446-4>
- Schön, D. (1983) Generative metaphor: A perspective on problem-setting in social policy. In Ortony, A. (Ed.) *Metaphor and Thought*. Cambridge, MA, Cambridge University Press.
- Selwyn, N., Pangrazio, L., Nemorin, S., & Perrotta, C. (2020). What might the school of 2030 be like? An exercise in social science fiction. *Learning, Media and Technology*, 45(1), 90–106. <http://dx.doi.org/10.1080/17439884.2020.1694944>
- Selwyn, N.; Ferreira, G. M. S. (2025). Interview with Neil Selwyn. *Revista Brasileira de Políticas e Administração da Educação*, 41 e142046, 2025.
<https://seer.ufrgs.br/index.php/rbpae/article/view/142046/95996>.
- Selwyn, N. (2016). Minding our language: why education and technology is full of bullshit ... and what might be done about it. *Learning, Media and Technology*, 41: 437-443.
<https://doi.org/10.1080/17439884.2015.1012523>
- Simpson, C. (2025). Why can't higher education agree on terminology for third-space professionals? *Journal of Learning Development in Higher Education*, 33.
<https://doi.org/10.47408/jldhe.vi33.1268>
- Stilgoe, J. (2023). We need a Weizenbaum test for AI. *Science*, 381(6658)
<https://doi.org/10.1126/science.adk0176>
- Tasioulas, J. (2022). Artificial intelligence, humanistic ethics. *Daedalus*, 151(2), 232-243.
- Teräs H., Teräs M., & Suoranta J. (2024). Holograms or hemorrhoids? Student teachers' imaginings of the digital futures of education. *Nordic Studies in Education*, 44(2), 122–141.
<https://doi.org/10.23865/nse.v44.5928>
- UNESCO (United Nations Educational, Scientific and Cultural Organization). (2021). Report of the Social and Human Sciences Commission (SHS). UNESCO. General Conference, 41st, 2021 Itemho 8.2, the Ethics of Artificial Intelligence, Adopted. 2411.2021. 41 C/73Annex.

Document code :41 C/73. Paris.

<https://unesdoc.unesco.org/ark:/48223/pf0000379920.page=14>

Veletsianos, G. (2010). *Emerging Technologies in Distance Education*. Edmonton, AB: Athabasca University Press.

Veletsianos, G. (2016). *Emergence and Innovation in Digital Learning: Foundations and Applications*. Edmonton, AB: Athabasca University Press.

Veletsianos, G. (2020). *Learning Online: The Student Experience*. Baltimore, MD: Johns Hopkins University Press.

Veletsianos, G., Johnson, N., & Houlden, S. (2024). How do Canadian faculty members imagine future teaching and learning modalities? *Educational Technology Research and Development*, 72(3), 1851–1868. <https://doi.org/10.1007/s11423-024-10350-4>

Winter, R. (1986). Fictional-critical writing: an approach to case study research by practitioners. *Cambridge Journal of Education*, 16(3), 175–182. <https://doi.org/10.1080/0305764860160303>

Zawacki-Richter, O., Conrad, D., Bozkurt, A., Aydin, C. H., ... & Xiao, J. (2020). Elements of Open Education: An Invitation to Future Research. *The International Review of Research in Open and Distributed Learning*, 21(3), 319–334. <https://doi.org/10.19173/irrodl.v21i3.4659>

Xiao, J., Bozkurt, A., Nichols, M., Pazurek, A., ... Themeli, C. (2025). Venturing into the unknown: Critical insights into grey areas and pioneering future directions in educational generative AI research. *TechTrends*, 1-16. <https://doi.org/10.1007/s11528-025-01060-6>

Yang, S. J., Ogata, H., Matsui, T., & Chen, N. S. (2021). Human-centered artificial intelligence in education: Seeing the invisible through the visible. *Computers and Education: Artificial Intelligence*, 2, 100008.