

GenAI and neoliberal governmentalities in education: The need for a slow response to fast solutions

Adam Davidson-Harden

Independent Researcher, Kingston, Ontario, Canada

Abstract

Neoliberal pressures have arguably increased education systems' vulnerability to the disruptive impact of generative artificial intelligence (genAI) technologies. GenAI's promise of 'fast' solutions and a surrogacy for the work of learners and teachers is both compatible with neoliberalism's focus on increased 'efficiency' and 'productivity', and in its implications for the replacement of the human with the algorithm in educational interactions. As educational institutions at the K-12 and tertiary levels continue to struggle to articulate policies in response to the evolving situation around genAI use in education, this essay argues that such policies should take an essentially participatory and precautionary approach, both respecting educators' professional judgement, and resisting the pressure to adopt a neoliberal vision of education. Instead, policy and pedagogical responses to genAI in education should articulate a 'slow' approach rooted in a 'counterpublic' that contests enthusiasm for genAI in education and its interaction with neoliberal governmentalities.

Keywords: *artificial intelligence, neoliberalism, governmentality, education policy, slow education*

New and old pressures on education

I write this as an educator with experience teaching at both the postsecondary (university, undergraduate and postgraduate) and secondary level, currently teaching in the area of eLearning (distance education courses in English and Social Sciences) at the secondary level. My Ph.d is in Education, and my dissertation and most published work relating to education has focused on issues of neoliberalism and education policy. The perspectives I explore here are rooted in my own research background as well as professional teaching experience. As all educators know, genAI tools have proliferated and become far more powerful and more commonly used by students (and also educators) in educational settings.

Educational policy, mirroring broader society, has struggled to keep pace with the explosive development and implementation of genAI, along with its associated challenges. While genAI's impacts on education and society have broadened, broader debates about AI have emerged, including stark fears about the future potential of general artificial intelligence (GAI, not to be confused with genAI). Founding experts in AI have issued warnings about GAI's potentially catastrophic disruption of society along many lines when it arrives (Milmo, 2024). Though GAI is still potentially decades away, genAI has certainly had an arguably disruptive impact on education systems already stressed by neoliberalism, at all levels. Meanwhile, corporations continue to accelerate innovations and development the technology despite calls for restraint and non-existent regulation, driven by the predictable pursuit of profit and competitive positioning in the capitalist economy (eg. Microsoft's involvement with open AI's transition to for-profit status in the US, or rapid increases in Chinese AI investment).

While most of the published research tracking the impacts and reception of genAI in education has focused on the postsecondary/tertiary level (Yusuf et al., 2024),

many of the trends and insights discernible in this literature offer cause for ongoing concerns around the direction of policy development with respect to student use of genAI at any level. In the stress of the current moment, it's necessary to situate the disruptive pressures of genAI in education within the overall terrain of the contested politics of education, which requires us to be attentive to how genAI interacts with neoliberal discourses and priorities. It is useful to unpack these problematics from the standpoint of the idiosyncratic and quotidian level of everyday practice to begin with (Lewis, 2005), before considering their situation in the overall terrain of contested discourses for education.

As reported by many researchers, genAI tools are frequently lauded and celebrated by many students and educators as tools which improve the 'efficiency' of their work, saving time and enhancing 'productivity' (Zhai et al., 2024, pp. 13,17; Yusuf et al., 2024, pp. 17, 23). There is a familiar echo of neoliberal governmentality (Peters, Besley & Olssen, 2009; Jones & Ball, 2023; Deuel, 2022) in this type of praise and enthusiasm for genAI, in its bland characterization of people as economic throughputs, of production factors in need of increased speed. Setting this discursive context aside for the moment, it's useful to understand the lived experience of the disruptive impact of genAI in the context of the everyday experience of teaching and learning. Any educator who is paying attention will tell you that genAI tools have become so increasingly powerful that their output as text transformers is not an accurate reflection of a student's independent thinking or capabilities. Educators understand well that genAI text output is difficult to detect, and requires significant scrutiny to discern (Murray & Tersigni, 2024). While the accuracy and capability of 'AI detectors' has been roundly criticized, there are still certain hallmarks of text produced by genAI that experienced educators can use to guide their professional judgement. Some advise that attempts to discern genAI

text and distinguish it from writing authored by an actual human being are futile. Such logic leads to an embrace of genAI tools due to their alleged inevitability, a situation one genAI-hospitable scholar describes as a new era of ‘post-plagiarism’ (Eaton, 2023), where educators should be less concerned with authentic, independent student work, as ‘co-creation’ between humans and machines is considered inevitable. This type of argument smacks of a type of fatalism and resignation, as fuel for a blindly permissive approach to technology acceptance which ignores the risks to students in dependence on genAI as a surrogate or substitute for independent thinking, writing and creating. I will return to the ongoing scholarly documentation of these risks later on, however, these risks are a crucial context for understanding the lived experience of genAI’s increasing presence in education.

From the standpoint of everyday teaching and learning, putting aside questions of copyright and intellectual property concerning who the ‘author’ or ‘owner’ of AI text output might be, as educators, we are faced with the reality of receiving submissions of student work that does not reflect a student’s capabilities or thinking, if it was automatically generated or edited by a genAI tool. This could be true of any written submission (and indeed even visual or other types of assessments), except, of course, if an assessment is invigilated and use of an internet-capable device by students is disallowed. These are, in fact, techniques which many educators are currently using to attempt to avoid falling into a situation where they receive genAI submissions that do not reflect student capabilities or thinking. If students submit work that doesn't reflect their capabilities or understanding, and teachers evaluate such work, we risk reducing teaching and learning to a type of educational nihilism, where teachers and learners are constrained by large language model interlopers in educational spaces. If, as

many proponents of genAI advocate, teachers resort to these tools to create instructional content and assessments, or even resort to AI to assist in grading work, we may even realize the type of situation Popenici describes:

In a dystopian academic future scenario, assessments are generated, completed, and graded through GenAI, culminating in an educational void where learning by both students and teachers is conspicuously absent (Popenici et al., 2023). (in Rudolph et al., 2024)

The intersection of genAI with neoliberal governmentality

Moving from the everyday to a broader level, offers a sophisticated critique that includes a consideration of the impact of neoliberalism and the political economy of education and AI (2023). He contends that as they are currently shaped, education systems are uniquely vulnerable to genAI's disruption in terms of the voluntary drift toward the hollowing out of higher education in general, as educational institutions have embraced neoliberal managerialism and the centrality of high-stakes assessments above all else:

The problem we have is that we are completely unprepared due to our glorifying of technology. The very amusing thing, and it is laughable, is that technology is showing us how far we are from what we should do. The risk is that we are going to lose our legitimacy entirely. It's a massive challenge because we turned assessment into this industrial process of mass assessment, with no quality, no look of originality, and need of substance. This is what you have to submit; use citations; use good grammar, and good syntax, and you don't do massive mistakes. It's good to go. You graduate. You're good. It's fantastic when we turn the whole system to this; it's just that we lost the plot, and then it is a disgrace. Technology is showing us how much we are at risk. It is striking at the core of education. This is a consequential big problem. It's fundamentally different. This

is not spell check. This is hitting the model at moment. This is going to change entirely what we are doing for good or for bad. [...] assessment is not asking you to come up with anything of substance, it's not asking you to come up with original ideas, God forbid. You have a the heart. It's a spike in the heart of the model of education as we have it today, and it's going to be a massive change. It's truly revolutionary, not because it's going to bring something necessarily better. It is revolutionary because it's going to ask institutions: what are you actually doing? (Popenici et al., 2023, 323)

The drift of universities toward a corporate model of education premised on mass inputs and outputs, as well as managerial techniques of governance - in short, the embrace of a corporatized, market-driven approach to education, and the constraining of teachers and learners inside such a system (Lewis, 2005; Peters, Besley & Olssen, 2009) - is all too compatible with the impact of genAI's fast and disruptive influence. In the context of neoliberal policy's pressure to cut public funding for social expenditure of all kinds, many funding models are tied to enrolment, which brings a constraining logic of its own (ie. increasing pressure for higher enrolment, see Pitman, 2022). Universities are increasingly figured as 'innovation engines' of a capitalist knowledge economy in neoliberal policy discourse (Davidson-Harden, 2010; Peters, 2003). The pull to reduce education to a strategic economic engine, or commodity consumed by students conceived through the reductive lens of *homo economicus* (Fleming, 2017), focusing on productivity, efficiency, and market outputs, is strong (Newfield, 2021). Under this prescriptive model for education, teachers and learners as figured as consumers and producers, accountable for a number of assessed products in an 'efficiently' functioning institution modelled after a business, with quantity and speed valued over quality and depth. Students purchase their educational services and complete and produce mass-assessed products, achieve grades, and are sent on their way.

Postsecondary educational institutions act to enlarge themselves after the model of corporations in the capitalist economy, competing as entrepreneurs in valuable educational markets, and university educators are expected to produce and accumulate an ever-increasing amount of publications as ‘research products’ as ‘value added’ to the university-as-corporation.

These are among many essential features of the impact of neoliberal governmentalities in education, where the latter term is adopted from Foucault’s exploration of how individuals themselves become implicated in reproducing dominant discourses and ‘governing themselves’, in this case in alignment with neoliberal visions for how education should be framed and enacted (Ball & Olmedo, 2023; Peters, Besley & Olssen, 2009; Deuel, 2022). As teachers and learners are constrained to govern themselves according to policies and discourse which help to reproduce neoliberal visions for education, right-wing voices call for the complete state defunding of education, with concomitant privatization (Roybal, 2024; Friedman & Friedman, 1980). Meanwhile, advocates of education as a human right have consistently pointed out the risks to equity of access involved in surrendering to the pressures of capitalism on schools, colleges and universities, under the neoliberal conception of education as a tradable commodity in a globalized marketplace (Tomasevski, 2005; Lerch et al., 2022; Edeji, 2024).

Neoliberal governmentalities must be appreciated along with the political economy of neoliberal austerity policies, which advocate for the reduction of public funding for social services of all kinds, along with deregulation, privatization and commodification, while cutting taxes for the wealthiest among us and empowering corporations over governments (Harvey, 2005). Altogether these movements comprise a program that Bourdieu once described as “the strengthening of the right

hand and the weakening of the left hand” of the state (Bourdieu, 1998). With this context of ‘old pressures on education’ in mind, arguments and exhortations concerning the alleged increased efficiency and productivity genAI offers education may also be seen as opportunities to reduce public funding for education and cut costs, not least in the form of human labour. Here the ‘new pressures’ of genAI integrate with the ‘older’, more consistent neoliberal pressures. Popenici observes that part of the attraction to genAI’s implementation in education is rooted in the attraction of automation and its promise of lower labour costs, which of course has improved profits for corporations in various industries (2023). As the rise of neoliberal discourse and policy has characterized ‘education services’ as a tradable commodity (Riep, 2021; Schugurensky & Davidson-Harden, 2005); and source of ‘competitive advantage’ in global marketplaces, it fits that neoliberal policy solutions would see genAI as a favourable tool for cutting public spending in education, through reliance on technologies to ‘streamline’ and even replace costly human workers in the name of ‘efficiency’ and ‘productivity’, in line with the neoliberal precepts of ‘new public management’ (Popenici, 2023; Olssen & Peters, 2005; Ball, 2016). Given the drive to cut costs – imitating corporations in the capitalist economy - is perfectly understandable that advocates for neoliberal policy imperatives might be strong proponents of genAI’s implementation in education. In an important sense, neoliberal visions for education are highly compatible with genAI’s promise of increased ‘efficiency’ and ‘productivity’, of course with the overall aim of cutting costs and ‘increasing productivity’ (to ‘better complete in the global economy’, to use the classic refrain).

What type of educational spaces does this neoliberal policy drift serve to create? This brings us back to the level of the idiosyncratic, as Lewis reminds us (2005), in terms of the lived experience of the impacts of genAI’s increasing prevalence in

education, at the level of teaching and learning. Increasingly omnipresent genAI tools offer students (and educators!) the opportunity to essentially circumvent the ‘messy’, deliberate and exploratory aspect of teaching and learning, if they can simply type a question or prompt into a genAI tool, which generates an answer for them. Accordingly, contemporary research literature focused on the impacts of AI has identified risks to students’ cognitive abilities and critical thinking skills arising from reliance on genAI tools (Oakley et al, 2025; Kosmyna et al, 2025; Cela et al., 2024; Krulaars et al., 2023; Sevnayaran & Potter, 2024; Zhai et al., 2024; Murray & Tersigni, 2024). As one researcher puts it, “Beyond the immediate issue of plagiarism, there is the deeper concern that if students resort to AI assistance frequently, they risk depriving themselves of genuine learning experiences” (Revell et al., 2024, 13). In a similar vein, the MLA Joint Task Force on Writing and AI reported

..students may miss writing, reading, and thinking practice because they submit generative AI outputs as their own work or depend on generative AI summaries of texts rather than reading. - Students may not see writing or language study as valuable since machines can mimic these skills (MLA-CCCC, 2023, 7).

In their recent systematic review concerning “The effects of over-reliance on AI dialogue systems on students' cognitive abilities”, Zhai, Widowo and Li identify “critical thinking abilities” as “a blend of cognitive abilities and critical thinking dispositions, emphasizing skills such as truth-seeking, systematic evaluation, inference, and self-regulation in problem-solving” (Zhai et al., 2024, p. 4), and observe the following trends:

As AI systems grow more sophisticated and their role in automated analysis expands, there is a risk that students may become overly reliant on these

technologies (Krullaars et al., 2023). This over-reliance could lead to a range of issues, including diminished critical thinking (Iskender, 2023), analytical thinking (Ferreira, 2020), and decision-making abilities (Pokkakillath & Suleri, 2023) susceptibility to AI-generated errors or AI hallucinations (Hatem et al., 2023), increased instances of plagiarism (De Angelis et al., 2023), and challenges related to lack of transparency (Carvalho et al., 2019) and algorithmic biases (Mbalaka, 2023). Moreover, habitual dependence on AI for decision-making may reduce individuals' motivation to engage in independent thinking and analysis, potentially leading to a weakening of essential cognitive abilities (Grinschgl & Neubauer, 2022) and automation bias (Gsenger & Strle, 2021). (Zhai et al., 2024, p. 4)

This same meta-analysis also identifies trends in literature documenting negative impacts on students in terms of creative and critical thinking skills generally, stemming from reliance on genAI. Indeed, it follows logically that if teachers and learners deliberately avoid challenges by having a genAI tool act as a surrogate, accomplishing tasks for them and providing 'fast' answers, the result is an avoidance of learning, which requires critical thinking. Teachers and learners making this type of choice are essentially circumventing both the challenges and rewards of education.

An analogy in the form of a thought experiment can help in understanding this type of situation further, in terms of the risks to a learner's cognitive abilities or critical thinking skills, in relying on genAI to complete tasks for them. If a person is challenged with completing a set of physical exercises to become stronger or more healthy as prescribed by a physician, therapist or trainer, and then presses a few buttons and watches as a machine completes these exercises in their place, they certainly do not become more healthy or stronger as a result.

The speed of the deployment of genAI has certainly challenged educational systems and the people who comprise them, when it comes to reckoning with these growing concerns. In the midst of genAI's rapid impacts on educational systems, Zhao, Widowo and Li offer a sobering account of the failure to keep ethical pace with the risks of genAI to teaching and learning:

The adoption and over-reliance on AI dialogue systems have overshadowed critical ethical concerns. Issues such as the generation of inaccurate or misleading content, algorithmic biases, plagiarism, privacy breaches, and transparency concerns have not been adequately addressed (Hua et al., 2023). The tendency among users, including students and researchers, to overlook or minimize these ethical challenges is concerning. There exists a substantial gap in the academic discourse regarding the long-term implications of such over-reliance on AI systems for essential cognitive skills like decision-making, critical thinking, and analytical thinking. The existing literature, while acknowledging these ethical concerns, lacks a comprehensive analysis of their impacts or offering strategies for mitigating these risks. This oversight is alarming, given the potential for AI dialogue systems to inadvertently weaken users' cognitive abilities by fostering an environment of dependency and uncritical acceptance of generated content. (Zhai et al., 2024, p. 7)

Later on in the same article, the authors offer the following conclusions, contrasting genAI's vaunted advantages of increased 'efficiency' with emerging trends around its risks to learners:

Despite the undeniable advantages of AI dialogue systems in streamlining research processes and enhancing academic efficiency, our analysis reveals a concerning trend: the potential erosion of critical cognitive skills due to ethical challenges such as misinformation, algorithmic biases, plagiarism, privacy breaches, and transparency issues [...] Over-reliance on AI systems can lead to

diminished creativity, as students in research and education might depend too heavily on AI-generated content, neglecting the development of their ideas and original thought processes. This dependency can foster complacency, making students less inclined to engage deeply with the material or develop essential problem-solving skills.” (Zhai et al., 2024, pp. 30-31)

If our perspective is limited to increased productivity and efficiency, however, plagiarism or risks to students’ cognitive abilities and critical thinking skills may not be our primary concern, and this type of thinking is worrisome, indeed. A missed opportunity to refine skills and think for oneself is a mere ‘externality’, as Milton Friedman would put it, to the more essential neoliberal goals of increased competition, speed, efficiency and productivity (Bakan, 2004). What is the purpose of education in such a context - what primary concerns do our policies express and attempt to enact? What, for instance, does a broadly permissive policy toward genAI imply about the type of education we seek to shape and facilitate? If secondary or postsecondary education is reduced to credit accumulation, ignoring the substance of the educational experience and the messy, exploratory challenges teaching and learning poses, what is left? As an educator currently teaching eLearning distance education courses in English and Social Sciences at the secondary level, I acutely share the concerns of another researcher and have experienced their effects repeatedly, and increasingly in my own practice:

Perhaps the most alarming aspect of this issue is the impact on educators’ ability to evaluate student performance accurately. When students use AI tools, it becomes challenging for instructors to discern the student’s proper understanding and mastery of the learning material. This can mask learning deficiencies, making it difficult for educators to provide targeted feedback and develop necessary intervention strategies. Consequently, the educational process becomes less

effective, and the true purpose of teaching and learning is compromised. (Grassini, 2023, 6)

Some of the reports coming from students themselves in the context of current literature are heartbreaking in this regard:

“I think it is safe to say that ChatGPT has spoiled me because it is becoming pretty hard for me to write a full sentence without the temptation to ask ChatGPT to fix it for me. Because they always use better words when you are trying to express.” (quote from an undergraduate student, in Chan & Colloton, 2024, 93)

“Reliance on chatbots can cause students to not really understand and engage with the material, leading to what I consider a grey area that technically does not feel like cheating, but the user does not actually learn anything.” (quote from an undergraduate student, in Gruenhagen et al, 2024, p. 7)

Another specific and heartbreaking example of these impacts comes from my corner of the world, the place we settlers call Canada (or that many Indigenous people and allies call Turtle Island). In research surveying 3804 young people over 18, the accounting corporation KPMG – which positions itself as an enthusiastic adopter and leader in the use of AI – found in October 2025 that

More than seven in 10 Canadian students (73 per cent) now rely on generative artificial intelligence (AI) for their schoolwork, up sharply from 59 per cent in 2024 and 52 per cent two years ago [...] The surge in popularity poses fresh dilemmas for educational institutions because the research also shows that generative AI is being used to avoid critical thinking, with nearly half (48 per cent) saying that their critical thinking skills have deteriorated since they started using it. (KPMG, 2025)

Tellingly, students also reported that while their grades may have improved, relying on genAI meant a trade-off in terms of what Kosmyna et al (2025) term ‘cognitive debt’:

As many as seven in 10 (71 per cent) say their grades improved after using generative AI. However, nearly the same number of students (66 per cent) say that despite getting better results, they don’t think they are learning or retaining as much knowledge. (KPMG, 2025)

These findings from my corner of the world mirror other recent research which reports a trend of ‘metacognitive laziness’ in learners who depend on genAI characterized by a lack of substantive engagement in learning (Fan et al., 2025). It stands to reason that by avoiding the work of exploring, learning and writing, that students may risk harm in terms of devaluation of skills, lost learning opportunities, and impaired critical thinking skills (Murray & Tersigni, 2024, p. 156). Students may legitimately ask themselves - ‘why would I engage in the messy, hard, exploratory and mistake-laden processes and challenges of learning to achieve a grade, when I can have genAI do it for me, and receive a good grade?’ Questions about the purpose of education loom here. Popenici offers some salient points concerning the impact of the proliferation of genAI tools on the one hand, and vulnerable, mass assessment-centric educational models on the other:

I did nationwide research on student motivation for learning. It turned out immediately that students find motivation for learning central. There is no surprise. There is a long literature showing that student motivation for learning is crucial for the quality of learning and the way they see their academic careers. In terms of motivation for learning, if we don't change our project of education, this is striking again at the core of motivation for learning. Because if you reduce

learning to assessment and the assessment can be outsourced by students to just write a sentence and think a bit about the text you have no motivation. Why would I do that? Why would I learn anything? Because I can just give it this AI solution. The kind of implications for universities are massive. (Popenici et al., 2023, 323-4)

Returning to my own professional context of secondary education, in their systematic mapping review, Yusuf and his co-authors note the paucity of research concerning the implications of genAI's increasing impact at the primary and secondary levels, with the bulk of existing research focusing on tertiary education:

The consequential nature of this gap becomes apparent when considering its implications. K-12 education serves as the bedrock for students' academic journeys, and the potential influence of GenAI on teaching methods, learning outcomes and educational experiences during these formative years is substantial. The lack of research in this critical area hinders the development of effective strategies for responsibly integrating GenAI into K-12 education and raises concerns about the haphazard implementation of these technologies.” (Yusuf et al., 2024, 26)

At the same time, we see enthusiastic proponents of genAI in education embrace learners' opportunity to relinquish control over their own learning by framing genAI's surrogacy in completing tasks as 'co-creation': “In the postplagiarism era humans are not only consumers of information, but we are co-creators of knowledge together with technology” (Eaton, 2023, 3). This type of argument is motivated by the sense of inevitability of the implementation and use of genAI in education, yet fails to reckon with the decentering of the human being from their own learning, and its risks.

In addition, the embrace of genAI by educators in their own work - whether to generate content or outsource the effort to search for and evaluate information, or even to assist with evaluation and assessment - is another distinct problematic in this context. Naturally, genAI impacts everyone in the context of teaching and learning. GenAI does indeed pose radical challenges to education, as well as substantial risks to students, which tend to be drowned out in the repeated choruses of enthusiasm for new technologies. Indeed the implications of a ‘hollowing out’ of the educational process described by Popenici are enormously consequential, and of course not just for universities, but for all levels of education. The scope of genAI’s impact should invite us to reflect on how we structure publicly-funded education, from policies around funding, right down to how curricula are implemented. Perhaps genAI’s ‘striking at the heart’ of a hollowed-out neoliberal approach to education represents a type of opportunity to challenge the vacuity of neoliberal and fordist prescriptions for teaching and learning.

A precautionary approach to genAI and resisting neoliberal governmentalities

It is evident that as one set of contestable ideas and policy priorities, neoliberal governmentalities remain active forces that seek to shape education, and that the increasing proliferation of genAI into educational spaces seems all too compatible with a neoliberal vision for education. Gerrard, Goodwin and Proctor utilize Fraser and Warner’s ideas of ‘publics and counterpublics’ to emphasize the contested nature of public discourse when it comes to education and debates about policy, as well as participatory education policy in particular (Gerrard et al., 2024; Fraser, 1990; Warner, 2002). An open embrace of genAI in educational policies, seen through this type of perspective, interacts with neoliberal priorities for education as one set of imperatives for policy in public discourse, or in Fraser and Warner’s conception, the dominant or hegemonic ‘public’ on offer.

If education is reduced to ‘efficient’, ‘productive’ and fast inputs and outputs, with learners duly graded and ranked, as Popenici observes, systems are left vulnerable to genAI, which exposes the flaws of neoliberalism’s reductionist approach. Of course we can expect students to choose to resort to a tool to produce text that they believe may guarantee a better grade, as a ‘fast’, ‘efficient’ and ‘productive’ way of achieving a better ranking, output and sorting. Seen through the perspective of the neoliberal *homo economicus*, this type of decision is just another ‘rational’, self-maximizing choice any consumer can make in the educational ‘marketplace’ (Becker, 1964). From a critical perspective, however, we can appreciate the tendency for students to rely on genAI to prepare work - or for educators to prepare content - as a dilution and degradation of the entire educational process, as a series of missed opportunities to learn, explore and grow, precipitated by the constant search for fast solutions. In policy terms, a permissive approach to genAI creates educational spaces where students may choose to essentially bypass the challenge and opportunity to explore, learn and demonstrate their capabilities independently. If educators opt to delegate the task of providing feedback to a genAI tool, then we have reached the type of dystopian situation Popenici has described.

These trends should invite some careful and critical reflection on directions for educational policy dealing with genAI in education. Choices concerning the shape of policies related to genAI in education should account for their tangible impact in terms of constraining possibilities and structuring teaching and learning. Rather than tilt toward openly permissive policy approaches to student use of genAI in educational contexts, for example, recognition of the substantial risk of harm to students’ cognitive and critical thinking abilities stemming from reliance on genAI tools calls for a precautionary approach. As long as there exists even potential risk of harm to students as a result of the use of genAI to prepare submissions, as

educators and educational policymakers we are doing students a disservice in embracing an openly permissive approach to the use of genAI in education. Further, policy development around genAI use in education ought to be as participatory and open as possible (Gerrard et al., 2024), in order to construct policy with as much attention as possible to the professional judgement of educators, whose practice is at the center of teaching and learning. Policies developed behind closed doors, or with limited participation from educators in terms of participation in policy development and review (for example, restricted to genAI enthusiasts), ignore the lived experience and perspective of those most responsible for education. When such *in camera* approaches to policy result in an overall stance which embraces genAI in education rather than respecting the professional judgement and autonomy of educators, we lessen educators' capability to structure educational spaces that protect and nurture opportunities for development of students' independent skills to explore, think, write, create and reflect on themselves and their worlds. While educators are of course a heterogeneous group with varying views on genAI, we may be the last line of defense against the real risk of harm to students who are generally encouraged in the use of genAI by a technology-embracing policy stance. As such, though educators are immersed in discourses and publics which promote its benefits in line with neoliberal governmentalities, we also have the agency to resist these discourses in our work (Ball & Olmedo, 2023). A participatory approach to policy around genAI which centers the experiences of teachers and learners – and not only the technology's enthusiasts, but also those mindful of its risks – has the promise of articulating a type of 'counterpublic' (Fraser, 1990, p. 67) which both resists neoliberal governmentality, and affirms teaching and learning as a process of the nurturing and growth of independent skills to think, write and create. Such a counterpublic is crucial as a response to the currently 'dominant public' of blind

technology acceptance. Centering the experiences of teachers and learners in policymaking around genAI is essential in considering its capability to obviate human-centered teaching and learning, and facilitate missed opportunities to learn and grow. A counterpublic is needed to challenge the vision promoted by educational leaders, administrations and government consultants who champion permissive or generally enthusiastic policies concerning genAI behind closed doors. When policies created under these conditions make passing references to insubstantial ‘guardrails’ without considering ethics and risks, and celebrating genAI’s potential to ‘accelerate’ learning by making it ‘efficient’ and ‘productive’, their authors are ‘speaking’ and performing neoliberal discourse (Ball, 2013). Such policies represent one type of imperative for education policy which deserves to be interrogated and resisted.

The slow alternative to ‘fast’ solutions

One potential ‘counterpublic’ to current enthusiasm for ‘fast’, genAI-driven education can be found in the idea of ‘slow education’. Emerging from critiques of capitalist ‘fast food’ practices rooted in the ‘slow food’ movement (Petrini, 2003), the idea of slow teaching and learning embraces the complex, exploratory and long-term nature of the educational process, with a focus on meaningful experiences not constrained by the drive for standardization, efficiency or assessment-centric educational spaces focused on speed and intensification (Jukić, 2022; Rink, 2025; Schick & Timperley, 2024). Most articulations of ‘slow education’ in response to the drive toward speed and neoliberal governmentalities have emerged from universities, where scholars and educators continue to grapple with increased corporatization and the lived experience of these discourses (Gearhart & Chambers, 2018; Berg & Seeber, 2016). In addition to responding to the shocks of neoliberal intensification and degradation of working conditions in

academia, many scholars articulate their observations on the usefulness of slow approaches in the context of the disruptions of the COVID-19 pandemic and its aftermath, with its additional effects of hurrying teachers and learners into ‘accelerated’ online learning (Shick & Timperley, 2024; Rink, 2025).

Increasingly, the neoliberal drive to accelerate education has prompted a reaction emphasizing slowness. Schick and Timperley point out that

Slow scholarship and slow pedagogy are not novel ideas in the academy, though their uptake remains partial and tentative, in part due to incentive structures that prioritise efficiency, quantity and outputs (223).

Along with others (Collett et al, 2018), these authors promote slowness as a reflective practice grounded in an ethic of care:

Care-full learning therefore often requires slowing down and focusing less on efficiency or ‘outputs’ to instead spend quality, meaningful time in relationship with others and to being present ‘in the now’ (Shick & Timperley, 2024, p. 226).

Rink echoes and expands on these types of principles by emphasizing the care and relationality of a slow movement for teaching and learning project undertaken at his university:

Slow teaching is a nascent movement forwarded by scholars who seek to imbue their teaching with attentiveness, deliberation, thoughtfulness, and open-ended inquiry. Slowness in this pedagogical stance is not synonymous with decreased velocity or curtailed curricula. Rather, Slow teaching seeks to foster relationships. (Rink, 2025, p. 519)

Drawing on Leibowitz and Bozalek’s characterization of slow teaching and

learning, Rink emphasizes that in addition to stressing relationality in educational spaces, ‘slow’ principles focus on care, attentiveness and exploration:

Firstly, it is very important to realise that ‘Slow’ has nothing to do with slowness/speed or duration, as Petrini, the originator of the Slow Food Movement, made explicit. Rather it is about attentiveness, deliberation, thoughtfulness, open-ended inquiry, a receptive attitude, care-fullness, creativity, intensity, discernment, cultivating pleasure, and creating dialogues between the natural and social sciences. The emphasis is quality rather than quantity, depth of engagement and a willingness to engage across differences of discipline and ideas. (Leibowitz & Bozalek, 2018, p. 983)

Here slow education is articulated as a deep and rich sense of exploration and connection, which above all requires the structure and opportunity of dedicated time and space. Slowness captures the idea that learning should not be accelerated, that making connections and exploring our world is not a ‘quick fix’, but an experience to be savoured and valued. When institutional education systems cram more students into classes and increase teacher-student ratios, thus restricting the opportunities for meaningful interactions (OECD, 2025), we are challenged to articulate models for educational spaces that might nurture meaningful interactions, rather than fast, mass throughputs.

Rink characterizes slowness in teaching and learning as an authentic and participatory pedagogical stance, rooted in reflective practice literature in teaching and learning (2025, pp. 524-5). Encouraging deliberate and open-ended opportunities for reflection as a part of the educational process offers an opportunity to ‘decelerate’ and create space for careful thought and meaning-making. A survey of educators involved in a project around slow teaching and

learning Rink helped to facilitate represents slow methods in the following way: “1. The goal of Slow teaching is to promote reflection, connection to lived worlds, and deep learning... 2. Slow teaching is also meant to foster relationships” (2025, pp. 527-8). With genAI in mind, we might add that relationality must be centered on human relationships, and not specious notions of ‘personalized’ learning facilitated by human interactions with large language model chatbots. The argument that genAI facilitates ‘personalized learning’ is ubiquitous, yet assumes the removal or decentering of human interaction, defining ‘personalization’ on the basis of interaction with large language model chatbots. As such technologies have become increasingly popular and widespread, we must remember the sometimes disastrous and disturbing results when chatbots are used as a surrogate for real human interactions, with consequences beyond lost learning opportunities and algorithmic bias, including mental health (Chatterjee, 2025).

While a full consideration of ideas and strategies for slow teaching and learning is beyond the scope of this article, keeping the principles of slowness in mind helps us envision possibilities for educational spaces which promote the type of messy, deliberate and exploratory teaching and learning opportunities which resist neoliberal pressures. Such practices hold the promise of articulating a vision for education that is not so vulnerable or beholden to genAI’s fast solutions and risks. At the instructional level, a slow approach to education might emphasize structuring decelerated educational spaces and interactions that resist regimes of accountability and performance, or the relentless ranking and sorting that typify mass education currently (Jukić, 2022). A slow approach values the centrality of exploration and relational human interaction necessary to cultivate experiences of joy and curiosity in teaching and learning, as opposed to the ‘fast’ model of accelerated mass inputs and outputs, managerial accountability and performance

regimes, economistic reduction of education to products – whether considered as assessments, students, or accelerated graduation rates. Jukić observes the tension between a slow approach and a competency-based curriculum that strives for homogeneity and standardization, including standardized tests and assessments (2022). Educational systems characterized by mass, fordist-style delivery of discrete courses for credit, with students to be ranked and sorted according to their grades on assessments, are vulnerable to genAI as an opportunity to essentially circumvent opportunities for teaching and learning. At the secondary level, the pressure to push students through systems is also uniquely vulnerable to genAI - if it might be perceived as aiding in improving ‘credit accumulation’ and graduation rates, powerfully driving metrics in school administration and governance.

A slow standpoint for considering the purpose of education is also consistent with Freire’s goal and hope of education facilitating ‘conscientization’, the growth of a critical consciousness in an individual, and their capacity to reflect and act upon their world (Freire, 1968; Schurugensky, 2011). If hegemonic policy discourse is centered on the ‘public’ (again, in Fraser and Warner’s terms) of enthusiastic acceptance of genAI and ‘fast’ education, such a situation calls for critical counter-narratives and ‘counterpublics’ that question the type of teaching and learning that ‘fast’, neoliberal and genAI-suffused educational policies and systems lead to. As educators interested in resisting neoliberal governmentalities for education, it is incumbent on us to create and nurture practices that embrace education as a potentially transformative space (Schugurensky, 2002).

Questions and possibilities: Re-centering education as human and slow

GenAI’s compatibility with a neoliberal vision and its governmentality in education - along with its risks to students in terms of circumvention of learning

and the miseducation that entails - should invite us to pause and consider alternatives. What would an educational system freed from neoliberal conditionalities and constraints look like, and what might it be like to teach and learn within it? What kinds of well-funded and adequately staffed, slow, dialogical and rich, experiential and exploratory spaces might we construct? How can we as educators support one another and students in moving toward slow education as a counterpublic response to neoliberalism? Even further, as genAI exposes the fault lines of vulnerability in prevailing educational systems, it is incumbent on us to consider possibilities beyond assessments, credit accumulation, ranking and sorting - the institutional constraints we find ourselves working within as educators and school administrators. We are faced with many possibilities and many questions. What can educational spaces centred on slow experiences for humans look like? Has genAI's disruptive arrival effectively 'deschooled' (Bartlett & Schugurensky, 2020) aspects of institutionalized mass education by offering the prospect of obviating human teaching and learning? 'How can existing educational institutions accommodate acts of resistance to neoliberal governmentalities and 'fast' education, and how might we enact a counterpublic that embodies the values of slow education? Can 'slow' approaches offer us opportunities to maintain the transformative potential of education, in Freirean terms? How might we reframe education so that to a student, education offers the opportunity to learn in rich, deep and reflective ways, as opposed to a frenetic, crammed race to a finish line? How can we articulate education as an opportunity to explore and expand our thinking, rather than as neoliberalism or human capital theory would frame it - the opportunity to maximize our economic self-benefit by consuming a service, and be accordingly evaluated, ranked and sorted?

I for one hope that conversations around policies relating to genAI in education can

see past the blind enthusiasm for the technology visible in so many quarters, not least in the ‘edupreneurial’ sector, evident in hyperbolically enthusiastic proponents of the technology, who are often consultants and consulting firms seeking to profit from providing enthusiastic advice to institutions and school districts concerning the promises of genAI (eg., Advanced Learning Partnerships, 2024; Fitzpatrick et al., 2023). To the fullest extent possible, the development of policies ought to include the full range of perspectives from educators, who are at the centre of these changes - and not just educators who enthuse about genAI or embrace the status quo, but also those who are critical of its impact and implementation. Policies should also crucially allow educators the choice as to whether to allow or proscribe genAI use. A precautionary approach calls for us ultimately to slow down with respect to genAI - not only with respect to its incorporation in our classrooms, but in terms of articulating policies that serve to govern and shape students, educators and ultimately society in general.

References

- Bakan, J. (2004) ‘The externalizing machine’, in *The corporation: the pathological pursuit of profit and power*. New York: Free Press, pp. 60–84.
- Ball, S. and Olmedo, A. (2023) “Care of the self, resistance and subjectivity under neoliberal governmentalities,” in *Neoliberalism and Education*. London: Routledge (Education and Social Theory), pp. 131–142. Available at: <https://doi.org/10.4324/9781003253617-8>.
- Ball, S.J. (2016) ‘Neoliberal education? Confronting the slouching beast’, *Policy Futures in Education*, 14(8), pp. 1046–1059. <https://doi.org/10.1177/1478210316664259>.
- Ball, S.J. (2013) *Foucault, power, and education*. First edition. New York: Routledge. Available at: <https://doi.org/10.4324/9780203078662>.
- Bartlett, T. and Schugurensky, D. (2020) “Deschooling Society 50 Years Later: Revisiting Ivan Illich in the Era of COVID-19,” *Sisyphus — Journal of Education*, 8(3), pp. 65–84. Available at: <https://doi.org/10.25749/sis.20833>.
- Becker, G. (1964) *Human capital; a theoretical and empirical analysis, with special reference to education*. New York: Columbia University Press.
- Berg, M., and Seeber, B. (2016) *The slow professor: Challenging the culture of speed in the academy*. Toronto ; University of Toronto Press.

- Bourdieu, P. (1998) 'The Left Hand and the Right Hand of the State', in *Acts of resistance: against the tyranny of the market*. New York: New Press.
- Çela, E., Fonkman, M. and Potluri, R. (2024) 'Risks of AI-Assisted Learning on Student Critical Thinking: A Case Study of Albania.', *International Journal of Risk and Contingency Management (IJRCM)*, 12(1), pp. 1–19. <https://doi.org/10.4018/IJRCM.350185>.
- Chan, C.K.Y. and Colloton, T. (2024) *Generative AI in Higher Education: The ChatGPT Effect*. Taylor & Francis. <https://doi.org/10.4324/9781003459026>.
- Collett, K.S. *et al.* (2018) 'Incubating a slow pedagogy in professional academic development : an ethics of care perspective', *South African Journal of Higher Education*, 32(6), pp. 117–136. <https://doi.org/10.20853/32-6-2755>.
- Davidson-Harden, A. (2010) 'Interrogating the University as an Engine of Capitalism: Neoliberalism and Academic "Raison D'état"', *Policy Futures in Education*, 8(5), pp. 575–587. <https://doi.org/10.2304/pfie.2010.8.5.575>.
- Deuel, R.P. (2022) 'Governing higher education toward neoliberal governmentality: a Foucauldian discourse analysis of global policy agendas', *Globalisation, Societies and Education*, 20(3), pp. 310–323.
- Druzin, B.H., Boute, A. and Ramsden, M. (2024) 'Confronting Catastrophic Risk: The International Obligation to Regulate Artificial Intelligence'. Rochester, NY: Social Science Research Network.
<https://papers.ssrn.com/abstract=4799195>
- Edeji, O.C. (2024) 'Neo-liberalism, human capital theory and the right to education: Economic interpretation of the purpose of education', *Social Sciences & Humanities Open*, 9, <https://doi.org/10.1016/j.ssaho.2023.100734>.
- Eaton, S.E. (2023) 'Postplagiarism: transdisciplinary ethics and integrity in the age of artificial intelligence and neurotechnology', *International Journal for Educational Integrity*, 19(1), p. 23. <https://doi.org/10.1007/s40979-023-00144-1>.
- Fan, Y. *et al.* (2025) "Beware of metacognitive laziness: Effects of generative artificial intelligence on learning motivation, processes, and performance," *British Journal of Educational Technology*, 56(2), pp. 489–530. Available at: <https://doi.org/10.1111/bjet.13544>.
- Fitzpatrick, D. (2023) *The AI classroom: the ultimate guide to artificial intelligence in education*. Beech Grove, IN: TeacherGoals Publishing, LLC (Everything EdTech series).
- Fleming, P. (2017) *The death of homo economicus: work, debt and the myth of endless accumulation*. London: Pluto Press.
- Fraser, N. (1990) 'Rethinking the Public Sphere: A Contribution to the Critique of Actually Existing Democracy', *Social Text*, (25/26), pp. 56–80. <https://doi.org/10.2307/466240>.
- Friedman, M. (1980) *Free to choose: a personal statement*.. New York: Harcourt Brace Jovanovich.
- Gearhart, S.S. and Chambers, J. (2018) 'Introduction: Contextualizing Speed and Slowness in Higher Education', in *Reversing the Cult of Speed in Higher Education*. London:

- Routledge, pp. 12–36.
- Gerrard, J., Goodwin, S. and Proctor, H. (2024) ‘Participatory politics and education policy reform: publics and histories’, *Discourse: Studies in the Cultural Politics of Education*, 45(4), pp. 451–463. <https://doi.org/10.1080/01596306.2024.2330344>.
- Grassini, S. (2023) ‘Shaping the Future of Education: Exploring the Potential and Consequences of AI and ChatGPT in Educational Settings’, *Education Sciences*, 13(7), p. 692. <https://doi.org/10.3390/educsci13070692>.
- Gruenhagen, J.H. *et al.* (2024) ‘The rapid rise of generative AI and its implications for academic integrity: Students’ perceptions and use of chatbots for assistance with assessments’, *Computers and Education: Artificial Intelligence*, 7. <https://doi.org/10.1016/j.caeai.2024.100273>.
- Harvey, D. (2005) *A brief history of neoliberalism*. Oxford: Oxford University Press.
- Jones, B.M.A. and Ball, S.J. (eds) (2023) *Neoliberalism and Education*. London: Routledge. <https://doi.org/10.4324/9781003253617>.
- Jukić, T. (2022) ‘Slow Pedagogy and Contemporary Teaching Strategies’, in *Educational Challenges and Future Prospects: Conference Proceedings. International Scientific Conference “75th Anniversary of the Institute of Pedagogy – Educational Challenges and Future Prospects*, Skopje: Institute of Pedagogy / Faculty of Philosophy, Ss. Cyril and Methodius University. <https://repository.ukim.mk:443/handle/20.500.12188/24972>.
- Kosmyna, N. *et al.* (2025) “Your Brain on ChatGPT: Accumulation of Cognitive Debt when Using an AI Assistant for Essay Writing Task.” arXiv. Available at: <https://doi.org/10.48550/arXiv.2506.08872>.
- KPMG Canada (2025, Oct. 9). Generative AI boom among Canadian students raises dilemmas: Students turn to AI, neglect critical thinking, KPMG finds. Available at: <https://kpmg.com/ca/en/home/media/press-releases/2025/10/generative-ai-boom-among-canadian-students-raises-dilemmas.html> (Accessed: November 4, 2025).
- Krullaars, Z.H. *et al.* (2023) ‘Exploring Initial Interactions: High School Students and Generative AI Chatbots for Relationship Development’, in *Mensch und Computer 2023 - Workshopband*, Gesellschaft für Informatik e.V., p. 10.18420/muc2023. <https://dl.gi.de/handle/20.500.12116/42444>.
- Leibowitz, B. and Bozalek, V. (2018) ‘Towards a Slow scholarship of teaching and learning in the South’, *Teaching in Higher Education*, 23. <https://doi.org/10.1080/13562517.2018.1452730>.
- Lerch, J.C., Bromley, P. and Meyer, J.W. (2022) ‘Global Neoliberalism as a Cultural Order and Its Expansive Educational Effects’, *International Journal of Sociology*, 52(2), pp. 97–127. <https://doi.org/10.1080/00207659.2021.2015665>.
- Lewis, M. (2005) ‘More than meets the eye: the under side of the Corporate Culture of higher education and possibilities for a new feminist critique (1).’, *Journal of Curriculum Theorizing*, 21(1), pp. 7–7.

- Milmo, D. (2024) “‘Godfather of AI’ shortens odds of the technology wiping out humanity over next 30 years’, *The Guardian*, 27 December.
<https://www.theguardian.com/technology/2024/dec/27/godfather-of-ai-raises-odds-of-the-technology-wiping-out-humanity-over-next-30-years>.
- Murray, N. and Tersigni, E. (2024) ‘Can instructors detect AI-generated papers? Postsecondary writing instructor knowledge and perceptions of AI’, *Journal of Applied Learning and Teaching*, 7(2), pp. 155–167. <https://doi.org/10.37074/jalt.2024.7.2.12>.
- Newfield, C. (2021) ‘Universities after neoliberalism: A tale of four futures’, *Radical Philosophy*, (210), pp. 77–86.
- Oakley, B. *et al.* (2025) “The Memory Paradox: Why Our Brains Need Knowledge in an Age of AI.” arXiv. Available at: <https://doi.org/10.48550/arXiv.2506.11015>.
- OECD (2025) How do student-teacher ratios and class sizes vary across education levels up to upper secondary education?: Education at a Glance 2025, Education at a Glance 2025. Available at: https://www.oecd.org/en/publications/education-at-a-glance-2025_1c0d9c79-en/full-report/how-do-student-teacher-ratios-and-class-sizes-vary-across-education-levels-up-to-upper-secondary-education_76b87b21.html (Accessed: November 6, 2025).
- Olssen, M. and Peters, M. (2005) ‘Neoliberalism, higher education and the knowledge economy: from the free market to knowledge capitalism.’, *Journal of Education Policy*, 20(3), pp. 313–345. <https://doi.org/Article>.
- Peters, M., Besley, A.C. and Olssen, D.M. (eds) (2009) *Governmentality Studies in Education*. Rotterdam: Sense Publishers.
- Peters, M.A. (2003) ‘Classical Political Economy and the Role of Universities in the New Knowledge Economy’, *Globalisation, Societies and Education*.
<https://doi.org/10.1080/1476772032000105483>.
- Petrini, C. (2003) ‘Chapter 1. Appetite and Thought’, in *Slow Food: The Case for Taste*. New York: Columbia University Press, pp. 1–36.
<https://www.degruyterbrill.com/document/doi/10.7312/petr12844-004/html>.
- Pitman, A. (2022) ‘The World Trade Organization and the Entrepreneurial University: The Global Competition for Students’, in *The Role of International Organizations in Education*. Leiden: Brill, pp. 155–172. https://doi.org/10.1163/9789004523111_009.
- Popenici, S. (2022) *Artificial Intelligence and Learning Futures: Critical Narratives of Technology and Imagination in Higher Education*. New York: Routledge.
<https://doi.org/10.4324/9781003266563>.
- Revell, T. *et al.* (2024) ‘ChatGPT versus human essayists: an exploration of the impact of artificial intelligence for authorship and academic integrity in the humanities’, *International Journal for Educational Integrity*, 20(1), pp. 1–19.
<https://doi.org/10.1007/s40979-024-00161-8>.
- Riep, C. (2021) *Unmasking Global Education Industries and Their Capital Accumulation*

- Strategies: On Materiality and Discourse. Doctoral dissertation. University of Alberta. Available at: <https://ualberta.scholaris.ca/items/2e7778f9-6bc5-4940-9120-5dea37a4ab1c> (Accessed: November 6, 2025).
- Rink, B. (2025) 'For slow teaching: courageous and compassionate pedagogy in times of change', *South African Geographical Journal*, 107(4), pp. 517–532. <https://doi.org/10.1080/03736245.2025.2472651>.
- Roybal, L. (2024) 'The Right-Wing Education Paradox: How Dismantling the Education Department Energizes Trump's Base at Their Own Expense'. Columbia Political Review. <http://www.cpreview.org/articles/2024/9/the-right-wing-education-paradox-how-dismantling-the-education-department-energizes-trumps-base-at-their-own-expense>
- Rudolph, J., Ismail, F.M.M. and Popenici, S. (2024) 'Higher Education's Generative Artificial Intelligence Paradox: The Meaning of Chatbot Mania', *Journal of University Teaching and Learning Practice*, 21(06). <https://doi.org/10.53761/54fs5e77>.
- Schick, K. and Timperley, C. (2024) '(Post)-pandemic subversive pedagogies: Slowness, relationality and care', *Journal of International Political Theory*, 20(3), pp. 218–231. <https://doi.org/10.1177/17550882241283579>.
- Schugurensky, D. and Davidson-Harden, A. (2005) 'The Gats and Trade in Educational Services: Issues for Canada in the Panamerican Context', in J. Zajda et al. (eds) *International Handbook on Globalisation, Education and Policy Research: Global Pedagogies and Policies*. Dordrecht: Springer Netherlands, pp. 457–479. https://doi.org/10.1007/1-4020-2960-8_29.
- Sevnarayan, K. and Potter, M.-A. (2024) 'Generative Artificial Intelligence in distance education: Transformations, challenges, and impact on academic integrity and student voice', *Journal of Applied Learning & Teaching*, 7, pp. 1–11. <https://doi.org/10.37074/jalt.2024.7.1.41>.
- Tomasevski, K. (2005) 'Globalizing What: Education as a Human Right or as a Traded Service?', *12 Indiana Journal of Global Legal Studies* 1 (2005), 12(1). <https://www.repository.law.indiana.edu/ijgls/vol12/iss1/1>.
- Warner, M. (2002) 'Publics and Counterpublics', *Public Culture*, 14(1), pp. 49–90.
- Yusuf, A. et al. (2024) 'Generative AI in education and research: A systematic mapping review', *Review of Education*, 12(2), p. e3489. <https://doi.org/10.1002/rev3.3489>.
- Zhai, C., Wibowo, S. and Li, L.D. (2024) 'The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review', *Smart Learning Environments*, 11(1), p. 28. <https://doi.org/10.1186/s40561-024-00316-7>.

Author Details

Adam Davidson-Harden is an independent researcher based in Kingston, Ontario, Canada. He obtained his Ph.d in Education from Western University in London, Ontario, in 2005, and completed a SSHRC postdoctoral fellowship at Queen's University in 2010. He has taught in the area of preservice teacher education at Western, as well as at Queen's University (Kingston, Ontario). He has also taught in the areas of Peace, Conflict and International Development Studies at Wilfrid Laurier University (Waterloo, Ontario) and Queen's. He is currently a full-time secondary teacher in the areas of Humanities and Social Science. His research interests focus on neoliberalism and education policy, peace, social and environmental justice movements, and atheism.