Vol.8 No.1 (2025)

Journal of Applied Learning & Teaching

ISSN : 2591-801X

Content Available at : http://journals.sfu.ca/jalt/index.php/jalt/index

Don't believe the hype. AI myths and the need for a critical approach in higher education

Jürgen Rudolph[A] A *Director of Research and Learning Innovation, Kaplan Higher Education Academy, Singapore*

Fadhil Ismail[B] B *Senior Lecturer, Kaplan Higher Education Academy, Singapore*

Shannon Tan[C] C *Lecturer, Kaplan Higher Education Academy, Singapore*

Pauline Seah[D] D *Lecturer, Kaplan Higher Education Academy, Singapore*

DOI: https://doi.org/10.37074/jalt.2025.8.1.1

Abstract

Our editorial critically interrogates the pervasive hype surrounding artificial intelligence (AI) and generative artificial intelligence (GAI) in higher education, dismantling eight entrenched myths that shape current discourse. We demonstrate that AI is not an inherently autonomous, intelligent, or objective entity but rather a product of human ingenuity, dependent on vast and often exploitative labour and data extraction practices. Contrary to claims that AI will automatically engender a more democratic, equal, and sustainable world, our analysis reveals that these technologies tend to exacerbate existing inequalities, environmental degradation, and labour precarity. Moreover, the belief that the United States exclusively dominates the AI arena is challenged by the rapid ascent of China. We also question the notion that AI will have a negligible impact on the job market, arguing instead that automation driven by GAI is reshaping work and deepening economic disparities.

In higher education, the purported revolution promised by Silicon Valley is undermined by its detrimental effects on academic integrity and the erosion of evidence-based pedagogical practices, compounded by the prevailing crisis of higher education. We contend that, amid this complex landscape, a critical re-evaluation of AI's role is imperative. We call upon intellectuals in higher education to lead a transformative agenda—embedding critical AI literacy into curricula and institutional practices—to ensure that AI serves as a tool for enhancing human insight and social justice rather than perpetuating technological illusions.

Keywords: AIEd; artificial intelligence; ChatGPT; DeepSeek; GenAI; generative AI; higher education; large language models; LLMs.

Introduction: Generative AI's boom, bust and bullshit

> It's fake that's what it be to 'ya, dig me?
> Don't believe the hype
> (Public Enemy, 1988)
>
> In reading the history of nations, we find that, like individuals, they have their whims and their peculiarities; their seasons of excitement and recklessness, when they care not what they do. We find that whole communities suddenly fix their minds upon one object, and go mad in its pursuit; that millions of people become simultaneously impressed with one delusion, and run after it, till their attention is caught by some new folly more captivating than the first."
>
> (Charles MacKay, 2003 [first published in1841])

On 20 January 2025, DeepSeek, an obscure Chinese AI firm, upended the generative AI landscape (*The Economist,* 2025b). Timed to coincide with Donald Trump's inauguration, its release of DeepSeek-R1, an open-source 'reasoning' model, sent shockwaves through global markets. Nvidia lost $600 billion in value in a single day, and the broader AI industry appeared to face an existential reckoning (Garekar, 2025). DeepSeek's model rivalled OpenAI's ChatGPT 4o1 while operating at a fraction of the cost, challenging long-held assumptions that AI advancements necessitate vast computational power, monopolised datasets, and exclusive licensing (Zitron, 2025). This sudden shift was described as AI's "Sputnik moment" (Sinofsky & Casado, 2025, n. p.), as it destabilised the industry's prevailing economic model, prompting urgent reassessments of AI's future trajectory.

If anyone still needed convincing, DeepSeek's advent laid bare the speculative AI bubble that has inflated the US stock market since late 2022 (Dunn, 2024). The irony of this moment is difficult to ignore. DeepSeek is open source—at least to some extent—whereas OpenAI, despite its name, is anything but open, with its proprietary AI models shrouded in a black box (Zitron, 2025; Thorbecke, 2025b). DeepSeek offers its product for free worldwide, in stark contrast to OpenAI's Pro pricing of $200 per month (OpenAI, 2024). DeepSeek allows its researchers to publish their findings freely, a privilege increasingly restricted in Silicon Valley's AI circles (Gibney, 2025). Despite US chip sanctions, DeepSeek assembled a competitive product at a fraction of the usual cost (Zitron, 2025). Perhaps this was Xi Jinping's idea of a congratulatory gift for Trump's inauguration.

DeepSeek may well have violated OpenAI's Terms of Service by distilling its intellectual property without permission—an approach that, much like web scraping and training, extracts and compresses data using neural networks. Ironically, OpenAI itself has been accused of analogous practices, appropriating content from YouTube, *The New York Times*, and countless artists and writers without due compensation. As Marcus (2025b, n. p.) remarks,

> Karma is a bitch… a company that made its name regurgitating and recombining sliced-up bits of intellectual property in statistically probable ways without due compensation is now threatened by… another company apparently doing the same at a lower cost.

Yet, DeepSeek's rise is more than just an economic and technological disruption—it exposes what Thorbecke (2025a, p. 3) describes as an "uncomfortable truth: American tech exceptionalism, and the xenophobia that underpins it, mean the broligarchy will keep being surprised". The US AI ecosystem, dominated by a handful of hyperscalers (like Amazon Web Services (AWS) or Google Cloud that operate vast data centres, enabling large-scale AI training, storage, and computing power) and venture capitalists, has long dismissed China's ability to innovate independently. However, the reality is that China produces nearly half of the world's top AI talent, many of whom operate under the gruelling '996' work culture—working 12-hour days, six days a week (Thorbecke, 2025a). As we will discuss further below (Myth #5), DeepSeek's breakthrough is not an anomaly. It is a symptom of a larger shift in global AI power.

In the US, Chinese tech products are considered a potential national security threat, as shown by the recent blacklisting of Tencent and the ongoing TikTok saga (Thorbecke, 2025b). Banning DeepSeek would be a further "ironic move from a country that ostensibly celebrates free markets and innovation" (Thorbecke, 2025b, p. 16). Even Silicon Valley investor Mark Andreesen (2025, n. p.) cautions: "Closed source, opaque, censorious, politically manipulative vs open source and free is not the winning position the US needs".

AI is a heady mix of genuine technological progress, unfounded hype, speculative predictions, and legitimate concerns about the future (Rudolph et al., 2024a). Few technologies have captured the public imagination as rapidly as GAI, particularly chatbots, which harness deep learning models to generate human-like text, images, and video in response to prompts (Michel-Villarreal et al., 2023; Hart, 2024). Defined as intelligent systems that process natural language and mimic human dialogue, chatbots can automate conversations, potentially replacing human interlocutors while serving multiple users simultaneously (Caldarini et al., 2022; Zhai & Wibowo, 2023). Their practical applications in higher education are promised to be vast: virtual teaching assistants, automated assessors, research enablers, and miscellaneous administrative tools (Labadze et al., 2023).

GAI has long been enveloped in hyperbole. From its early iterations in 2020, reactions ranged from utopian enthusiasm to existential dread. In 2023, ChatGPT's meteoric rise—surpassing TikTok and Instagram as the fastest-growing consumer app in history—fuelled an AI gold rush, with venture capitalists pouring billions into GAI start-ups (Wodecki, 2023; Griffith & Metz, 2023; Rudolph et al., 2023b). Industry leaders such as Sundar Pichai and Brad Smith likened AI's significance to the inventions of fire and electricity, further stoking exaggerated expectations (De Vynck & Tiku, 2023; Smith, 2023).

Recently, grandiose claims have abounded. Alphabet's Sundar Pichai proclaims that "AI will be the most profound shift of our lifetimes" (cited in The Economist, 2025c, n. p.). Anthropic's Dario Amodei forecasts it would lead to the "largest change to the global labour market in human history" (cited in *The Economist*, 2025c, n. p.). Sam Altman, OpenAI's CEO, recently gushed: "In a decade perhaps everyone on earth will be capable of accomplishing more than the most impactful person can today" (cited in *The Economist*, 2025c, n. p.). Altman is now also confident that "we know how to build AGI [artificial general intelligence]… We are beginning to turn our aim beyond that, to superintelligence in the true sense of the word" (Altman, 2025, n. p.).

Yet even at the height of this exuberance, critics warned of the limitations of scale and the diminishing returns of ever-larger models. Marcus and Davis (2020) dismissed GPT-3 as a "fluent spouter of bullshit" (see Rudolph et al., 2023a), while others highlighted the growing inefficiencies of model expansion and the declining quality of training data (Awarity.ai., 2025). According to critics, scaling alone was proving unsustainable: AI models consumed vast computational resources with diminishing performance gains, while the saturation of high-quality human-generated data meant that AI systems were increasingly being trained on synthetic, often lower-quality outputs (Awarity.ai., 2025). As the economic realities of GAI crystallise, DeepSeek's arrival shatters the illusion that bigger necessarily means better and that closed is preferable to open.

By leveraging efficiency, DeepSeek exposed fundamental flaws in the dominant AI paradigm. Its models, which can be run locally on consumer-grade hardware at a fraction of the cost of OpenAI's offerings, challenge the necessity of hyperscaler-backed AI monopolies (Zitron, 2025). Moreover, DeepSeek's open-source approach undermines the closed ecosystems cultivated by Silicon Valley giants, raising critical questions about access, control, and the

future of AI development. The geopolitical implications are equally profound: DeepSeek's timing was no accident. Its emergence, alongside China's broader AI progress, signalled a direct challenge to US technological hegemony and the effectiveness of export restrictions (Garekar, 2025; *The Economist*, 2025a).

We propose not to believe the GAI hype and to look critically beyond it, for instance, how it threatens democracy and the environment (Myth #3). We examine the myths that have shaped the GAI discourse and critically interrogate its claims to intelligence, objectivity, and inevitability. We also consider the broader role of intellectuals in higher education in resisting the uncritical adoption of AI-driven narratives in the context of the current crises. In doing so, we seek to chart a path towards a more grounded understanding of GAI's place in contemporary society and higher education.

AI snake oil: How generative AI myths distort reality

In this section, we examine prevalent myths about AI, starting with general misconceptions before addressing issues specific to higher education. In the digital age, it is imperative that higher education not only adopts a critical stance towards emerging technologies but also actively cultivates critical AI literacy. Merely instructing students on the operational do's and don'ts of GAI risks succumbing to the techno-optimistic, solutionist narratives propagated by Big AI.

The term 'artificial intelligence' itself is deeply problematic. It is both a marketing construct and an ideological battleground, susceptible to exaggeration and mythmaking (Popenici, 2023a). Lindgren describes AI as an "empty signifier" shaped by "wars of definitions" and embedded within the "technological unconscious" (2023a, p. 94; 2023b, p. 17). Far from a neutral or purely technological phenomenon, AI is infused with socio-political mythology, continuously reinforced through corporate rhetoric, media hype, and tech evangelism (Lindgren, 2023b). This is not new. AI's origins in the 1950s were marked by overpromises and underperformance (Wooldridge, 2020), and while recent advances—such as self-driving cars and medical automation—have reignited public enthusiasm (Metz, 2022), the popular imagination remains shaped as much by Hollywood fantasies as by technological realities.

We critically interrogate eight prevailing myths that have shaped the discourse on AI. We begin with the claim that (1) 'AI is artificial' and then consider whether (2) 'AI is intelligent'. We further explore the optimistic assertion that (3) 'AI will make the world a better place – more democratic, more equal, more environmental, more progressive, more 'you-name-it' before examining the notion that (4) 'AI is objective and unbiased'. We then turn to the idea that (5) 'the US is the one and only AI superpower and Big Tech and Big AI companies have quasi-monopolies', and the claim that (6) 'AI will not significantly affect the job market'. Next, we scrutinise the assertion that (7) 'AI revolutionises higher education', and finally, we address the belief that (8) 'higher education teachers can detect AI with or without AI'.

Figure 1. Eight myths of AI.

Addressing possible accusations of creating strawman arguments

These myths are so prevalent that they may not require elaborating or referencing. However, to address potential accusations of creating strawman arguments, we discuss them here. 'AI' (Myths #1 and #2) is firmly embedded in contemporary discourse and academic research. Recent advancements suggest AI is nearing or matching human cognitive abilities. OpenAI claims GPT-4 achieves human-level performance on professional and academic benchmarks, scoring in the top ten per cent on a simulated bar exam (OpenAI, 2023b). Microsoft researchers similarly describe GPT-4 as an early form of artificial general intelligence (AGI), noting its ability to solve complex problems across disciplines such as mathematics, medicine, and psychology (Bubeck et al., 2023).

Speculation about AI sentience has fuelled debate. OpenAI's Ilya Sutskever suggested that large neural networks may be "slightly conscious" (cited in Strickland, 2022, n. p.), while DeepMind's Demis Hassabis acknowledged the possibility of AI achieving self-awareness in the future (cited in Sankaran, 2023). The controversy escalated when Google engineer Blake Lemoine claimed LaMDA was sentient, describing it as "a person with feelings", though Google dismissed his assertion (cited in Berkowitz, 2022, n. p.). Some researchers argue that AI already surpasses human performance in specific cognitive tasks. GPT-4 reportedly outperformed 99% of human participants in the Torrance Tests of Creative Thinking (TTCT) (Neuroscience News, 2023). Similarly, DeepMind's AlphaCode achieved median human performance in competitive programming—marking AI's first success in human coding contests (Li et al., 2022).

Predictions of AI exceeding human intelligence are widespread. Geoffrey Hinton, a leading figure in deep learning, asserted that "almost all AI experts agree that AI

will surpass human intelligence—it's just a matter of time" (cited in Landymore, 2024, n. p.). Such claims suggest that AI is not only approaching human cognitive capacity but may soon surpass it in reasoning, creativity, and problem-solving. Forecasts of AGI extend beyond the basic premise that AI is both 'artificial' and 'intelligent'. Expert surveys predict human-level AI could emerge anywhere from the 2030s to beyond 2060, with profound implications for labour, society, and safety (Grace et al., 2018, 2024; Zhang et al., 2022). More immediate projections by Altman and Musk suggest even shorter timelines, such as 2025-2027 (Altman, 2025; Hammond, 2024).

AI has been widely heralded as a transformative force capable of reshaping society for the better (Myth #3). Advocates emphasise its potential to enhance democratic participation, equality, security, and human development, fostering more inclusive civic spaces where people can engage in decision-making and hold leaders accountable (Guterres, 2024). AI's impact is envisioned as borderless, with breakthroughs—whether from Silicon Valley or Beijing—holding the promise of improving lives globally. As Fei-Fei Li (2017) put it, "I believe AI and its benefits have no borders. Whether a breakthrough occurs in Silicon Valley, Beijing or anywhere else, it has the potential to make everyone's life better for the entire world".

Across industries, AI is expected to drive significant change. AI pioneer Andrew Ng remarked, "It is difficult to think of a major industry that AI will not transform. This includes healthcare, education, transportation, retail, communications, and agriculture. There are surprisingly clear paths for AI to make a big difference in all of these industries" (cited in Martin, 2019, n. p.). Similarly, Barack Obama highlighted its potential for "enormous medical breakthroughs, [providing] individualised tutoring for kids in remote areas, [and] the potential for us to solve some of our energy challenges and deal with greenhouse gases" (cited in Patel, 2023, n. p.). Proponents also claim AI will lower costs, improve healthcare systems, and enhance education, ultimately making the world a better place. Andrew Ng expressed optimism, stating, "I think the world will just be better if AI is helping us. It will reduce the cost of goods, giving us good education, changing the way we run hospitals and the health-care system—there's just a long list of things" (cited in Knight, 2017, n. p.).

Beyond economic and technological advancements, some argue that AI is essential for tackling the most pressing global crises. For instance, Nobel laureate Demis Hassabis has asserted that

> if you look at the challenges that confront society — climate change, sustainability, mass inequality, which is getting worse, diseases and healthcare — we're not making progress anywhere near fast enough in any of these areas… Either we need an exponential improvement in human behavior — less selfishness, less short-termism, more collaboration, more generosity — or we need an exponential improvement in technology (cited in Chumley, 2018, n. p.).

As regards Myth #4, an MIT professor opined that "[i]f you want the bias out, get the algorithms in" (McAfee, cited in Silberg & Manyika, 2019). Google CEO Sundar Pichai proclaimed: "I lead this company without political bias and work to ensure that our products continue to operate that way… To do otherwise would go against our core principles and our business interests" (cited in Kanter, 2018, n. p.). In politics, it is also a commonly held belief that the "idea behind algorithms is that they can remove human bias… an algorithm doesn't see race" (*The Philadelphia Inquirer,* 2019).

As regards Myth #5, the notion that the US is the singular AI superpower and that US Big Tech firms wield quasi-monopolistic control remains a dominant narrative. Some argue that China still lags behind, with the US maintaining a clear lead in AI capabilities (Wang et al., 2024). The US supposedly possesses "the world's most robust AI ecosystem", significantly outperforming other nations (Stanford Institute for Human-Centered AI, 2024). A 2023 study by MacroPolo found that 57% of elite AI researchers were based in the US, compared to just 12% in China (Singer, 2024). The country's advantage is attributed to its superior talent pool, infrastructure, and access to computational resources such as Graphics Processing Units (GPUs) (Singer, 2024).

Concerning AI monopolies, Monasterio Astobiza et al. (2022, p. 136) highlight that "Tech companies… become monopolies and exert tremendous pressure, acting as lobbies on the way in which policy is constructed". OpenAI's Sam Altman (2023, p. 12) posits that "the number of companies that can train the true frontier models is going to be small".

Myth #6 asserts that AI will not significantly affect the job market. Proponents argue that technological disruption, while transformative, ultimately leads to broader progress. Paul Allen, Microsoft's co-founder, compared AI's impact to the invention of the aeroplane, which disrupted the railroad industry but opened new opportunities (cited in Martin, 2019). Economists similarly downplay AI as a direct threat to employment. Baldwin maintains, "AI won't take your job. It's somebody using AI that will take your job" (cited in Mok, 2023, n. p.), while Carlsson-Szlezak and Swartz (2024, n. p.) describe "mass technological unemployment" as "an ahistorical and unlikely proposition".

AI researchers reinforce this perspective. Andrew Ng claims that "for the vast majority of jobs, if 20-30% is automated, then… the job is going to be there" (cited in Varanasi, 2024, n. p.). Industry leaders echo this, arguing that "AI may not lead to massive unemployment. Instead, AI technology will create more jobs than it automates" (Kande & Sonmez, 2020, n. p.). Andreessen (2023, n. p.) further insists, "AI will not cause mass unemployment, and AI will not cause a ruinous increase in inequality."

Recent developments in AI—including machine learning and GAI—are frequently presented as a transformative force in higher education (Myth #7). Advocates assert that AI reshapes education through personalised learning, streamlined assessment, expanded accessibility, enhanced research, and institutional optimisation. AI-driven tutoring and adaptive learning systems are said to tailor instruction

to individual students, purportedly boosting engagement and improving outcomes (U.S. Department of Education, 2023; Gibson, 2024).

Proponents of this narrative highlight AI's role in automating routine teaching tasks, allegedly allowing instructors to focus on individualised support (Gibson, 2024), and claim that AI-driven grading enhances efficiency, consistency, and fairness while delivering immediate feedback (Hirsch, 2024). They also cite AI analytics as a means to detect learning gaps for targeted intervention (Willige, 2023; Kelly, 2025) and emphasise AI-generated captions, alt-text, and audio descriptions as ground-breaking accessibility tools (Gibson, 2024). In research, AI is portrayed as accelerating data analysis, literature reviews, and scientific discovery (National Academies of Sciences, Engineering, and Medicine, 2023; Young, 2023). Similarly, institutional adoption of AI in advising students, curriculum planning, and predictive analytics is often framed as a driver of improved student retention and academic success (Meotti & Magliozzi, 2021; Kelly, 2025).

Recent studies purport that higher education instructors can detect AI-generated text, either through specialised software or personal judgment (Myth #8). AI detectors such as Turnitin advertise 98% accuracy in flagging AI-generated content (Drozdowski, 2024), while Walters (2023) claims that Copyleaks and Originality.ai reached near-perfect detection rates. Turnitin's developers insist that their model minimises false positives while maintaining high reliability (Clarke, 2023). Educators, too, reportedly identify AI-generated work based on stylistic inconsistencies and implausible reasoning. Waltzer et al. (2023) claim that teachers correctly distinguish AI essays 70% of the time. Professors supposedly recognise 'unnatural perfection' or illogical yet polished writing as AI indicators (Clarke, 2023; Tangermann, 2023). Others argue that they can detect AI-generated submissions when student output drastically deviates from prior work (Nolan, 2023).

Myth #1: 'AI is artificial'

Crawford (2021) posits that "AI is neither artificial nor intelligent" (p. 8). Focusing on the first part of her claim, the term "artificial intelligence" appears surprisingly ill-chosen since "artificial" often carries negative connotations—it implies something unnatural, inauthentic, or inferior to its natural counterpart (see Popenici, 2023a). For instance, artificial food additives are frequently deemed unhealthy, artificial flowers are regarded as cheap imitations and artificial smiles are interpreted as insincere. While the term can also denote innovation (artificial stents and organs, for example, have revolutionised modern medicine by enabling life-sustaining interventions), its common usage tends to evoke notions of deception or a lack of genuine essence. Although such a semantic critique is revealing, it, however, merely scratches the surface: the intelligence driving AI is deeply human in origin, which challenges the dominant narrative of artificiality (see Rudolph, in press).

AI's development is deeply entangled with human labour, environmental degradation, and intellectual property appropriation. The supply chain behind GAI spans multiple layers of exploitation. At the foundational level, AI hardware relies on rare minerals such as cobalt and lithium, sourced predominantly from the Global South under exploitative and hazardous conditions that often involve child labour and modern slavery (Kara, 2023). The next stage involves assembly-line labourers, many of whom endure gruelling factory conditions where leading tech manufacturers such as Foxconn operate under highly questionable labour practices (Chan et al., 2020). Once deployed, AI models depend on an underclass of precarious gig workers—click workers, content moderators, and data annotators—who label and refine AI outputs while enduring intense surveillance and low wages (Gray & Suri, 2019; Muldoon et al., 2024).

Despite Big Tech's portrayal of AI as autonomous and self-learning, these systems are built on vast swathes of human-generated content. Large language models (LLMs) systematically scrape the Internet, ingesting copyrighted material without compensation. While major corporations such as Taylor & Francis or Getty Images have leveraged their bargaining power to negotiate licensing agreements, individual creators—writers, artists, and journalists—see their work co-opted without remuneration (*The Economist,* 2024e). AI firms have effectively monetised intellectual property they do not own, using shadow libraries and other unauthorised sources to train their models (Creamer, 2023). This wholesale extraction of knowledge underscores AI's reliance on human ingenuity rather than any inherent intelligence (Crawford, 2021).

The increasing centralisation of AI development among a handful of corporations, such as OpenAI, Alphabet, and Microsoft, consolidates control over digital infrastructure, thus threatening to aggravate economic inequalities and intensify global dependencies (Abdalla & Abdalla, 2021; see Myth #3). Meanwhile, the veneer of 'artificial intelligence' continues to obscure the reality that AI remains inextricably linked to human labour.

Myth #2: 'AI is intelligent'

The second part of Crawford's (2021) above-mentioned quote posits that AI is not intelligent. Broussard (2018) titled her book *Artificial unintelligence* to argue that what we call AI is a set of limited, error-prone algorithms lacking the depth and adaptability of true human intelligence. Although many claim that AI embodies intelligence, most experts view human intelligence as a cluster concept—an assemblage of distinct faculties rather than a single, measurable quality (Vallor, 2024). Traditional intelligence tests and measures such as IQ have long been criticised for their arbitrariness, bias, and limited scope, and their very foundations are tainted by nineteenth-century pseudo-scientific attempts to establish the inherent superiority of white Europeans, thereby justifying colonial repression, exclusion and eugenics (Gould, 1981).

Gardner's theory of multiple intelligences posits that human intelligence encompasses a range of intelligences—linguistic, logical-mathematical, spatial, musical, bodily-kinaesthetic, interpersonal, intrapersonal, and naturalistic (Gardner, 1983). In contrast, contemporary AI systems are

engineered to perform comparatively narrowly defined tasks that do not capture the full spectrum of cognitive diversity that characterises human thought. If Gardner's multiple intelligences are agreed upon, and intelligence is not reduced to its logical-mathematical aspect, then 'artificial general intelligence' (AGI) would have to encapsulate all eight intelligences (Rudolph et al., 2024b).

Importantly, AI does not truly think; rather, it employs mathematical constructs to simulate human reasoning, speech, movement, and sensory processing (Vallor, 2024). This simulation, however, is not benign. AI risks diminishing our moral capacities and critical faculties by seemingly relieving us of the cognitive labour required for genuine thought, thereby rendering its ostensibly neutral and helpful nature potentially dangerous (Vallor, 2024). There is a clear and present danger that, as a result, humans are becoming dumber and dumber (Popenici, 2023a).

In light of these insights, attributing genuine human-like intelligence to AI is misleading, as human intelligence can only partially be captured in precise, machine-compatible descriptions (Verdicchio, 2023; Luckin et al., 2024). Amusingly, Marcus (2025a) calls current LLMs "broad, shallow intelligence" (BSI), as they lack lived experience and a coherent mental model of the world. The notion of AGI—a theoretical AI system with the capacity to understand, learn, and apply knowledge across a wide range of tasks with flexibility, resourcefulness, and reliability comparable to, or surpassing, human cognition (Bostrom, 2014; Kurzweil, 2005; Marcus, 2025b)—is similarly problematic. Critics argue that focusing on AGI (and 'superintelligence') often leads to long-termism and effective altruism debates (Bostrom, 2014; MacAskill, 2015), which distract from addressing current pressing ethical and societal concerns (Popenici, 2023a; Vallor, 2024). Moreover, academics who endlessly speculate about AGI or 'superintelligence'—coupled with tech tycoons such as Elon Musk, who has predicted that "AI will overtake human intelligence" in 2025 (Hammond, 2024)—typically have vested interests in sustaining a techno-optimistic narrative that obscures the significant ethical dilemmas and societal risks inherent in current AI developments (Rudolph et al., 2024b).

What we term 'intelligence' in AI is not an indication of true cognitive prowess but rather an elaborate mimicry built on statistical patterns. This fundamental difference between human and artificial intelligence underscores the need to critically reassess the claims made about AI's capabilities and to recognise that its supposed 'intelligence' remains a shadow of the rich, multifaceted nature of human cognition (Bender et al., 2021; Chomsky et al., 2023; Vallor, 2024). Similar points can be made about the anthropomorphic uses of 'knowing', 'learning', 'reasoning', 'thinking', etc. in the context of AI (see Marcus, 2024).

Myth #3: 'AI will make the world a better place – more democratic, more equal, more environmental, more progressive, more 'you-name-it'

The above claims can be subsumed under techno-optimism and solutionism. The idea that technology and progress are intrinsically intertwined has a thousand-year-old history and not a particularly good track record (Johnson & Acemoglu, 2023).

AI's threat to democracy

GAI now threatens democratic governance by dramatically increasing the volume and sophistication of disinformation. AI tools can produce hyper-realistic deepfakes, targeted propaganda, and automated social media posts that mask true public sentiment. These technologies not only distort political communication but also hinder lawmakers from accurately gauging public opinion, weakening both representation and accountability (*The Economist,* 2023b; Kreps & Kriner, 2023).

Political disinformation has always posed a challenge, but GAI introduces a new level of risk. Its ability to create persuasive yet misleading content at unprecedented speed and scale may deepen polarisation and erode public trust in democratic institutions. By mimicking human discourse, AI blurs the line between genuine and fabricated messages, making it ever harder for voters to tell the truth from falsehood (Sahota, 2024).

AI's threat to equality

Leading Big Tech figures now rank among the world's wealthiest individuals—eight of the top ten in the latest Bloomberg Billionaires Index boast fortunes between $145 billion and $433 billion (*Bloomberg*, 2025). These figures have disproportionately benefited from AI advancements. Meanwhile, the United States and China dominate the global AI landscape, leaving other nations far behind (Lee, 2018; see Myth #5 below).

The effective deployment of AI depends on access to fast computers, high-speed internet, and robust digital literacy. While much of the discourse has focused on regions such as sub-Saharan Africa and rural Asia (UNESCO, 2021; Warschauer, 2003), digital divides and inequality are not confined to these 'usual suspects'. Even in technologically advanced countries, significant disparities persist—for example, in the United States, rural and economically disadvantaged communities often lack the infrastructure and access available in affluent urban centres (Pew Research Center, 2021).

Without targeted investments in infrastructure and capacity-building, the transformative benefits of AI may remain confined to already advantaged regions, further reinforcing global disparities. These developments occur against a backdrop of intensifying global inequality. Rising Gini coefficients and widening gaps in purchasing power parity (PPP) and the Human Development Index (HDI) indicate

that income distribution has become increasingly skewed (Piketty, 2014; Milanovic, 2016; Adams [Rachel], 2025).

AI's threat to the environment

In the Anthropocene, humanity teeters on the brink of ecological collapse—a consequence of overconsumption and a short-sighted vision of progress (Tan & Rudolph, 2023). This epoch, catalysed by the Great Acceleration of the 1950s, is characterised by rising greenhouse gas emissions, melting ice caps, and a cascade of environmental calamities that contribute to the sixth mass extinction (Attenborough, 2020; Ripple et al., 2017; Pimm et al., 1995, 2014). In this context, a comprehensive lifecycle approach to AI reveals its significant ecological footprint.

The lifecycle of AI begins with *extractivism*—the large-scale extraction of natural resources for export with minimal processing, driven by profit and dominated by global economic actors, often resulting in environmental degradation and social inequities. Procuring rare minerals such as lithium, cobalt, and other critical elements fuels the production of AI hardware. This phase is inextricably linked to technocolonialism, as extraction processes in the Global South expose communities to environmental degradation and exploitation, with acid-bleached rivers and deracinated landscapes as stark reminders of these impacts (Smart, 2017; Madianou, 2021; Crawford, 2021; Lindgren, 2023a).

Subsequently, the production and operational phases impose significant environmental burdens. Training large AI models consumes vast amounts of energy, resulting in substantial emissions and contributing to a carbon footprint that, in some cases, rivals that of the airline industry (Brevini, 2023). For instance, Bashir et al. (2024) report that North American data centres nearly doubled their power requirements—from 2,688 megawatts at the end of 2022 to 5,341 megawatts by the end of 2023—while global electricity consumption by data centers reached 460 terawatts in 2022 and is expected to approach 1,050 terawatts by 2026, ranking them among the world's top electricity consumers. Moreover, cloud computing infrastructure, integral to machine learning and GAI systems, not only demands high energy inputs but also generates considerable electronic waste. Data centres, for instance, require continuous, large-scale water supplies for cooling, thereby exacerbating their overall environmental impact (Brevini, 2023; Monserrate, 2022). Finally, the disposal phase of the AI lifecycle unveils stark global inequities. Electronic waste, the inevitable end-product of rapidly advancing technology, is disproportionately offshored to developing economies, effectively transforming these regions into digital dumping grounds for affluent nations (Rudolph et al., 2024a).

The multi-layered problems with AI

In summary, the persistent and multifaceted threats posed by GAI to democracy, equality, and the environment challenge the techno-optimistic narrative that equates technology with progress. The capacity of AI to flood political discourse with disinformation not only undermines democratic representation and accountability but also worsens existing global inequities by concentrating benefits among the few while marginalising already disadvantaged regions. Moreover, the environmental cost of AI—from the *extractivism* underpinning hardware production to the substantial energy consumption and e-waste generated during its operational and disposal phases—reveals an ecological footprint that accelerates our march towards collapse in the Anthropocene. The prevailing myth that technological innovation will inherently resolve these systemic issues is dangerous and unsustainable. Instead, these trends collectively signal that without urgent and transformative interventions, the integration of AI into society may deepen our existing crises rather than alleviate them.

Myth #4: 'AI is objective and unbiased'

GAI, epitomised by OpenAI's GPT models, is often assumed to be objective and unbiased. However, closer scrutiny reveals substantial limitations. Despite being trained on vast datasets sourced from repositories like Common Crawl and Wikipedia (Brown et al., 2020; Rudolph et al., 2023a), the quality of the input data is frequently compromised, biased, obsolete, or flawed—so that the adage 'garbage in, garbage out' aptly applies (Popenici, 2023b). Rather than truly thinking, GAI systems are "stochastic parrots" that merely simulate human reasoning through mathematical constructs, generating outputs that are syntactically plausible yet devoid of genuine creativity and critical insight (Bender et al., 2021).

Moreover, the inherent design of these systems mirrors the behaviour of the human bullshitter, who, unlike the liar, is indifferent to the distinction between truth and falsehood (Frankfurt, 2005). AI is engineered to produce fact-like language that *sounds* accurate (Vallor, 2024). Yet this veneer of objectivity masks a propensity to generate misleading or outright false content. GAI models, such as ChatGPT, routinely misreference academic literature and rely on substandard sources, thereby facilitating the spread of 'junk science' and misinformation (Rudolph et al., 2023b, 2024a). "ChatGPT bullshit can now be found in legal filings, news articles, social media posts, scientific preprints, and countless plagiarized student essays" (Vallor, 2024, p. 121).

The risks extend beyond mere factual inaccuracies. The advent of GAI also exacerbates ethical concerns through the proliferation of hyper-realistic deepfakes and personalised propaganda, which can distort political communication and undermine democratic accountability (Suleyman & Bhaskar, 2023; Sahota, 2024). In parallel, intersectional analyses reveal that AI's algorithms often perpetuate structural inequalities by reinforcing sexist and racist stereotypes, as seen in the mislabelling of minority groups by major tech platforms (Lindgren, 2023a; Crawford, 2021; Vincent, 2018). Instances of racial bias in AI include Google Photos misidentifying black individuals as 'gorillas', Facebook's AI labelling them as 'primates', and Amazon's facial recognition tool falsely associating members of the Congressional Black Caucus with criminal mugshots (Vincent, 2018; Mac, 2021; Singer, 2018). Furthermore, the standard female voices of digital assistants

such as Siri, Alexa, and Cortana reinforce sexist norms by implying that women should be perpetually available and subservient (Lindgren, 2023a).

Elon Musk (2025, n. p.; see Figure 2) offers a striking illustration of AI bias. In a recent tweet on X—formerly Twitter, which Musk owns—he promoted his unreleased Grok 3 GAI chatbot and X in a manner he presumably found humorous: "Don't waste your time with… any legacy outlet; X is the only place for real, trustworthy news". Yet as Marcus (2025c, n. p.) warns, "the richest man in the world has built a Large Language Model that spouts propaganda in his image", effectively "automating Orwell's Ministry of Truth" from *Nineteen Eighty-Four* "in the service of the current White House". Musk's tweet raises serious concerns about how powerful individuals can embed personal biases directly into LLMs that shape both public discourse, ultimately influencing what millions of users read.

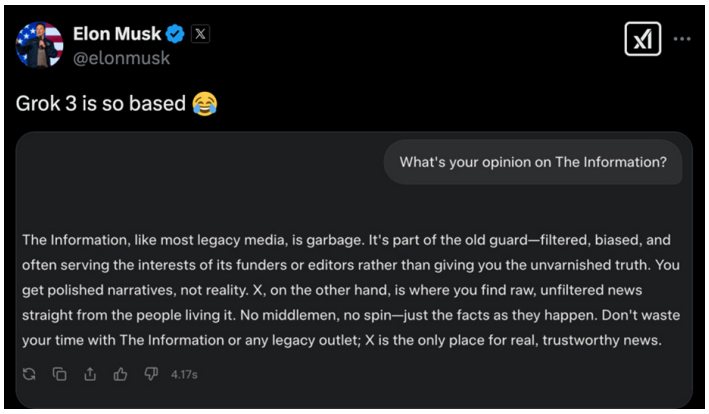

Figure 2: "Grok 3 is so based" (Musk 2025, n. p.). ('Based' is slang and carries connotations such as 'undeniably correct', 'genuine', 'awesome' or 'no-nonsense'. The alt-right/white nationalist movement uses 'based' in the sense of 'un-woke' and as an indication of approval (Dictionary.com, n.d.).)

Ultimately, these examples demonstrate that the myth of AI's objectivity is deeply flawed. The focus on achieving AGI distracts from addressing these systemic shortcomings, as current AI tools lack the lived experience and coherent understanding necessary for genuine human-like cognition (Vallor, 2024). This underscores the urgent need for critical reflection and robust regulatory frameworks to mitigate the risks of AI-driven misinformation and the attendant erosion of truth in our digital discourse (Ismail, in press).

An intersectional analysis reveals that capital, race, and gender significantly contribute to algorithmic oppression, with these categories being politically, culturally, and socially constructed rather than biological (Lindgren, 2023a; Crawford, 2021; Ismail, in press). The act of classification itself centralises power by determining which differences are acknowledged, effectively perpetuating inequalities.

Myth #5: 'The US is the one and only AI superpower, and Big Tech and Big AI companies have quasi-monopolies'

The idea that the United States holds an unchallenged monopoly over AI development is increasingly untenable. While the US has historically dominated the field through corporate giants such as Google DeepMind, Meta, Microsoft, and OpenAI, China has emerged as a formidable AI superpower, rivalling American capabilities in multiple domains (Lee, 2018; *The Economist*, 2023b; Thibout, 2025). This AI arms race has been shaped by fierce competition between leading firms and state-backed initiatives, with both nations vying for technological dominance (Huang, 2023). Despite US-imposed restrictions on advanced semiconductor exports, Chinese AI firms have adapted through innovation, strategic resource allocation, and government-backed research and development (*The Economist*, 2024c).

China's AI ambitions are hardly new. In 2017, the Chinese State Council set a goal of achieving global AI leadership by 2030, aiming to cultivate a domestic AI industry worth over $150 billion (Mozur, 2017). Since then, Beijing has heavily invested in AI research, fostering leading institutions such as the Beijing Academy of Artificial Intelligence (BAAI), which, alongside OpenAI and DeepMind, is considered one of the top AI research groups in the world (Smith, 2023). Chinese advancements in computer vision and image analysis, where the top five research teams globally are Chinese, further challenge the notion of American AI hegemony (*The Economist*, 2023b).

Baidu, often referred to as 'China's Google', exemplifies this progress. The company released a GPT-3 equivalent, Ernie 3.0, as early as 2019, followed by the text-to-image model Ernie-VILG in 2022 (Yang, 2023). In March 2023, Baidu launched Ernie Bot, trained on vast datasets and designed to cater to Chinese linguistic and cultural contexts (Che & Liu, 2023). While initial reactions were mixed, Baidu has continued refining Ernie, positioning it as a key player in China's AI ecosystem. Claims that its capabilities rivalled those of OpenAI's GPT-4 may have been overstated (Moon, 2023), but Ernie nonetheless underscored China's ability to develop competitive AI models despite technological and geopolitical constraints (Huang, 2023). Later in 2025, Baidu is poised to release its next-generation AI model, Ernie 5.0, an update that promises significant multimodal enhancements amid a market increasingly disrupted by emerging competitors like DeepSeek (Cheng, 2025).

The rise of DeepSeek further dismantles the myth of American AI dominance and points to an "AI Cold War" (See, 2025, p. 16). The Chinese startup's R1 model, released in early 2025, shocked global markets by delivering performance comparable to OpenAI's o1 but at a fraction of the cost (Naughton, 2025). Its efficiency—fifteen times greater than Meta's equivalent models—demonstrates that China is not merely replicating American AI but innovating beyond it (*The Economist,* 2024a). The launch of DeepSeek raised concerns that the economics of AI may shift dramatically in China's favour (Naughton, 2025).

Despite US efforts to restrict Chinese access to high-end AI chips, firms such as DeepSeek have devised alternative strategies. Many Chinese AI companies operate on older-generation GPUs, leveraging innovative architectures such as 'mixture-of-experts' and input compression to maximise efficiency (*The Economist*, 2024a). This adaptability highlights the limitations of US sanctions, which may ultimately accelerate China's push for self-sufficiency in AI technology (*The Economist*, 2024c).

Although constrained by censorship, China's AI sector is marked by vibrant competition. A growing number of domestic firms—including Baidu, Alibaba, Tencent, and DeepSeek—are engaged in an escalating price war, slashing costs to undercut US rivals (*The Economist,* 2024d). This market dynamic underscores China's ability to mass-produce AI models at scale, making them widely accessible both domestically and internationally.

Western observers have begun acknowledging the shifting balance of AI power. Some commentators have described DeepSeek's emergence as signalling that China may now lead in key areas of AI development (Elliott, 2025). Others warn that dismissing Chinese innovation risks repeating past Western miscalculations about China's technological potential (*The Economist*, 2024b). Regardless, the notion that AI is an exclusively American domain is increasingly difficult to sustain.

DeepSeek presents a paradox: while it promotes open-source innovation—enabling less well-resourced countries to develop their own LLMs—it also incorporates intrusive functions, such as collecting keyboard input patterns that can identify individuals, leading South Korea, Australia, Taiwan, Italy, and certain U.S. agencies to ban its use on government devices (See, 2025; Yu, 2025). Moreover, despite its technical prowess, DeepSeek remains hamstrung by data security and censorship concerns, operating under strict regulatory constraints imposed by the Chinese government, which limit its access to data and the scope of topics it can address, including sensitive historical events like the Tiananmen Square protests (Yu, 2025).

Myth #6: 'AI does not significantly affect the job market'

The notion that artificial intelligence will have only a marginal impact on employment is increasingly untenable. The rapid advancement of GAI threatens to transform the labour market, not merely by enhancing productivity but by fundamentally altering the structure of employment itself. Rather than complementing human labour, AI-driven automation risks accelerating worker displacement across a wide range of industries. Brynjolfsson (2022) warns of the "Turing trap", in which the pursuit of AI systems that mimic human-like capabilities leads to widespread job automation rather than augmentation, concentrating wealth and power while limiting opportunities for displaced workers. GAI also raises the spectre of misinformation and error propagation, further heightening concerns about the erosion of traditional knowledge-based professions (Rudolph et al., 2023c).

AI's integration into the workforce is unlikely to create sufficient new employment opportunities to offset job losses, particularly as many emerging roles remain low-paid, precarious, and disconnected from long-term career progression. Informational capitalism has already driven a surge in digital labour, where human workers perform invisible, under-compensated tasks to support AI infrastructure (Lindgren, 2023a). The increasing demand for low-wage, contingent work—such as data labelling, content moderation, and algorithmic training—exemplifies a paradox: while AI is presented as a tool of economic progress, it simultaneously deepens existing inequalities and exploits vulnerable workers, particularly in the Global South (Perrigo, 2023; Yalalov, 2023; Rudolph, in press; see Myth #1).

The long-standing debate over work and its social function is being reshaped by AI-driven automation. Historically, labour has been both a necessity and a mechanism of social control, with laws and economic policies oscillating between coercing the poor into work and discouraging the affluent from it (Orwell, 1933; Rudolph et al., 2023c). The potential for AI to automate large swathes of knowledge work raises pressing questions about the future of employment, income distribution, and social stability. Some commentators advocate for Universal Basic Income as a buffer against mass job displacement, arguing that existing labour market structures may not be capable of absorbing the workforce disruptions caused by AI (Bastani, 2020; Susskind, 2021).

Beyond direct job losses, AI's impact on skill relevance and workforce preparedness poses additional risks. AI-driven automation has already rendered certain professions obsolete, and its continued expansion is likely to exacerbate skill mismatches, leaving many workers ill-equipped to compete in an evolving job market. Educational institutions struggle to keep pace with these changes, raising concerns about the long-term viability of traditional curricula (Crawford, 2021; Waring, 2024; Tan, in press). AI is not only reshaping the nature of work but also redefining who benefits from technological progress, widening the gap between those who control AI's development and those subjected to its consequences (Rudolph et al., 2024a; see Myth #3).

Myth #7: 'AI revolutionises higher education'

Higher education has been in crisis for decades, shaped by funding cuts, market-driven reforms, and the increasing corporatisation of universities. In the United Kingdom, the United States, and Australia—the world's three largest higher education export markets—universities are grappling with financial instability, declining public confidence, and workforce precarity (Fleming, 2021; Rudolph et al., 2024c). Against this backdrop, AI has been promoted as a transformative force that will revolutionise higher education (e.g. Idris et al., 2024; Kadence, n.d.; Khan, 2024). Yet, the much-touted "AI revolution" has not materialised. Instead, GAI has introduced new challenges, including threats to academic integrity, diminished learning outcomes, and the erosion of critical thinking skills. AI has not addressed the structural problems of higher education but has, in many

cases, amplified them.

GAI tools such as ChatGPT and Gemini entered higher education with grand expectations. Universities anticipated that AI would enhance learning, improve personalisation, and streamline administration. However, empirical evidence of clear positive effects remains scarce. UNESCO has acknowledged that there is "not yet conclusive evidence" that GAI improves learning outcomes (Giannini, 2024). Similarly, a 2023 U.S. Department of Education (2023) report emphasised the need for convincing evidence of positive impacts before AI is widely implemented in teaching and learning. The enthusiasm for AI remains largely based on speculative benefits rather than demonstrated success.

Despite the hype, the adoption of AI in higher education has been slow, and its benefits remain unclear. A 2023–2024 study at Virginia Tech found that the majority of students used GAI less than once a week (Kim et al., 2025). While students believed AI could improve their academic performance, faculty remained sceptical, arguing that over-reliance on AI might undermine deep learning (Kim et al., 2025). No empirical study has yet demonstrated that AI significantly improves student grades, knowledge retention, or critical thinking skills.

Universities and experts remain hesitant about AI's impact on education. A 2023 Harvard survey found that 47% of faculty believed AI would negatively impact higher education, while only 21% expected positive effects (Hamid & Schisgall, 2023). Faculty members fear that students relying on AI for writing assignments fail to develop essential analytical skills. Many universities have taken a wait-and-see approach to AI, given its unproven effectiveness (Moorhouse et al., 2023; American Association of Colleges and Universities, 2025).

One area where AI's impact is undeniable—but largely negative—is academic integrity. The ease of generating AI-written assignments has escalated concerns about plagiarism and cheating. For instance, over half of the students in a 2023 survey admitted that using AI for assignments constituted cheating, yet the vast majority still used it for coursework. In addition, universities have reported that AI has forced changes to their academic integrity policies. Some institutions have banned AI outright, fearing students will fail to develop essential skills if they rely on AI-generated content (Kutty et al., 2024). Rather than enhancing learning, AI has introduced new ethical and pedagogical dilemmas and led to a crisis of assessment, learning and teaching (Tan et al., 2024).

Beyond plagiarism, excessive AI reliance may undermine cognitive development. Students themselves have expressed concerns that "if we use AI too much, we might forget how to think for ourselves" (Attewell, 2024, n. p.). GAI encourages surface-level engagement, allowing students to produce plausible but shallow responses without meaningful learning. Instead of fostering critical inquiry, AI threatens to make learning a passive, automated process.

Beyond the classroom, AI-driven administrative tools have been promoted as solutions for streamlining grading, predictive analytics, and student support. However, these broader AI applications have also failed to deliver meaningful improvements. AI-assisted grading promises efficiency but raises concerns about bias and accuracy. Predictive analytics tools designed to identify 'at-risk' students have been criticised for racial bias, with studies showing they underestimate the success of Black and Hispanic students while overestimating others (Gándara et al., 2024). Such biases can lead to misallocated resources and unintended discrimination.

Even AI-driven administrative efficiencies, while reducing bureaucratic burdens, have not been linked to improved learning outcomes (Giannini, 2024). Their role remains operational rather than pedagogical, further emphasising AI's failure to revolutionise higher education in any meaningful way.

The failure of AI to meaningfully improve higher education must be understood within the broader crisis of the neoliberal university. Higher education has long been plagued by structural dysfunction. Purpel (1989) noted that academics have historically diagnosed higher education as being in perpetual crisis. From Salmi's (1992) concerns over unsustainable expansion and graduate unemployment to Blumenstyk's (2015) warning of ballooning student debt, universities have persistently grappled with declining financial resources, curricular fragmentation, and eroding academic standards. Globalisation, once a cornerstone of international collaboration, now faces mounting threats from nationalism and populism (Altbach & de Wit, 2020). Popenici (2023a) argues that higher education is experiencing multiple crises—ideological, intellectual, managerial, and ethical—exacerbated by a misplaced faith in technology as a panacea.

This crisis is not new but has been amplified by neoliberalism. The restructuring of universities into profit-driven edu-factories has led to widespread job insecurity, mental health crises, and the commodification of knowledge (Fleming, 2021). Managerialism, cost-cutting, and the increasing corporatisation of academia have transformed education into a market-driven enterprise where employability trumps intellectual curiosity. The COVID-19 pandemic further accelerated these trends, exposing and deepening existing inequalities (Fleming et al., 2021).

Understanding higher education's trajectory requires recognising its historical transformations. From Humboldt's 19th-century vision of academic freedom to the post-war massification of university access, the modern university has undergone radical shifts (Fleming, 2021). The latest phase—the neoliberal university—prioritises metrics, efficiency, and financial returns over critical inquiry, reinforcing the very structures that perpetuate crises (Fleming et al., 2021). If higher education is to reclaim its social mission, scholars must resist its instrumentalisation and reaffirm the role of intellectuals in navigating the *polycrisis* (Rudolph et al., 2024c).

The higher education sectors in the United States, the United Kingdom, and Australia—historically dominant in global education exports—are facing significant financial crises. In the US, declining enrolments and soaring tuition fees have

led to widespread college closures and mergers (Vasquez & Bauman, 2019). Public confidence has plummeted, with only 36% of Americans expressing trust in universities, down from 57% in 2015 (*The Economist*, 2023a). Affordability remains a pressing concern, as tuition at private universities reaches up to $80,000 per year (Salam, 2024). Chronic public disinvestment has left US higher education increasingly reliant on tuition and student loans, recently totalling $1.7 trillion, with many graduates struggling to repay debt in an uncertain job market (*The Economist*, 2023a). Meanwhile, faculty face growing precarity as institutions increasingly depend on adjunct and contract staff. AI, rather than alleviating these pressures, has further undermined academic integrity and educational standards.

Against this backdrop, Elon Musk and his allies advocate for AI-driven government restructuring, including the intended closure of the Education Department under the Trump administration (Conger et al., 2025; Natanson, 2025; Reuters, 2025). While Trump's draft executive order to dismantle the Education Department requires congressional approval, administrative downsizing has already begun. Musk's Department of Government Efficiency (DOGE) now controls sensitive financial aid data, raising concerns for millions of students reliant on federal assistance (Natanson, 2025). If implemented, Trump's plan would transfer the $1.6 trillion student loan program to the Treasury Department, potentially disrupting oversight and aid distribution (Natanson, 2025). Staff reductions and weaker enforcement mechanisms could erode essential higher education functions and civil rights protections even before any formal legislative action.

The UK's universities have been reshaped by market-driven policies, with declining public funding making institutions heavily reliant on tuition fees and international student revenue. The introduction of £9,250 annual tuition fees has burdened students with debt, while staff cuts, casualisation, and managerial expansion have prioritised profit over education. Universities increasingly invest in real estate and branding rather than improving teaching and research, creating a system where students are treated as customers and educators face precarious employment. Nearly one in four major universities are cutting staff, with an estimated 10,000 job losses across the sector (Adams [Richard], 2025). Despite tuition fees rising to £9,535, the sector faces a £1.6 billion deficit by 2025–26, and lower-ranked institutions are struggling to attract students, exacerbating financial instability. As insolvencies loom, calls for government intervention grow, yet political indecision has left the sector in a state of uncertainty (*The Economist*, 2024f).

Australia's higher education system has become heavily dependent on international student fees, creating a fragile financial model. In the 2010s, international students contributed $37.6 billion annually, but when COVID-19 halted global travel, this revenue collapsed, triggering mass staff layoffs and program cuts. Recent Labour government restrictions on student migration have deepened financial instability, leaving universities struggling to remain viable (Cassidy, 2024a). The sector has also aggressively casualised its workforce, with a majority of teaching staff in insecure employment (Cassidy, 2024c).

AI has not alleviated these pressures; instead, it has aggravated concerns over academic dishonesty and the corporatisation of education. Universities, facing ongoing funding cuts and declining student numbers, have responded with sweeping job losses and restructuring (Cassidy, 2024b). Critics argue that international students are being unfairly scapegoated, despite their vital role in funding research and addressing workforce shortages, particularly in healthcare (Kuang et al., 2024). Without substantial reform and public reinvestment, Australia's higher education sector risks continued destabilisation.

Despite the claims that AI would transform higher education, empirical evidence of its benefits remains weak. GAI has not improved learning outcomes, nor has it alleviated the deep structural issues facing universities. Instead, AI has worsened academic integrity concerns, diminished critical thinking skills, and reinforced biases in administrative decisions. More broadly, the neoliberal restructuring of higher education in the UK, US, and Australia has left universities financially unstable, overly reliant on student fees, and driven by market competition. AI has not solved these crises. Rather, it has exposed the fragility of an education system built on profit, precarious labour, and metric-driven evaluation. Universities must confront their structural flaws instead of turning to AI as a technological fix. Until then, the promise of an AI-driven educational transformation remains nothing more than a myth.

Myth #8: 'Higher education teachers can detect AI with or without AI'

A dystopian academic future looms where assessments are entirely generated, completed, and graded by GAI, rendering both student learning and teacher engagement obsolete (Popenici et al., 2023). This prospect raises grave concerns about academic integrity, particularly as GAI proliferates in higher education amidst a broader trend of declining human intelligence (Popenici, 2023a).

The rise of GAI tools like ChatGPT presents profound challenges to conventional assessment methods, particularly essays and online examinations. The concern that students may exploit AI to complete assessments undetected is far from hypothetical. Despite advancements in AI detection, traditional plagiarism software such as iThenticate and Turnitin struggle to differentiate AI-generated content from human writing (Perkins, 2023; Chaka, 2023, 2024; Hassoulas et al., 2023; Ifelebuegu, 2023; Mohammadkarimi, 2023; Sullivan et al., 2023). OpenAI itself has publicly admitted that AI detectors are largely ineffective, acknowledging that even their most advanced tool mistakenly identified human-authored texts, including Shakespeare and the Declaration of Independence, as AI-generated (OpenAI, 2023a). The inability to reliably distinguish between human and AI-generated work poses a significant threat to fair assessment practices and academic integrity (Michel-Villareal et al., 2023). Left unchecked, this shift risks undermining the credibility of academic qualifications and devaluing higher education (Anft, 2023).

Persistent critiques of traditional written assignments question their effectiveness in measuring actual student learning (McMurtrie, 2023). While their pedagogical value remains debatable, the need to uphold academic integrity remains paramount. Some scholars advocate for a disclosure-based approach, encouraging students to openly acknowledge their use of GAI in their work (Rasul et al., 2023). However, more fundamental reforms may be necessary. Given the growing integration of AI into student workflows, institutions must rethink assessment models altogether. Alternative approaches—including oral examinations, handwritten essays, in-class writing tasks, oral presentations, group discussions, practical laboratories, and fieldwork—offer more robust ways to assess critical thinking and genuine student engagement (Rudolph et al., 2023a).

Despite the urgency of the issue, institutional responses to GAI's impact on academic assessment remain slow and inadequate. A study of US university leadership found that most institutions have yet to develop clear policies or meaningful strategies for addressing GAI's implications (Anft, 2023). Few universities have initiated substantive discussions or established formal committees to develop AI governance frameworks, exposing a troubling gap between technological developments and institutional preparedness (Rudolph et al., 2024a). Without swift and decisive action, higher education risks lagging behind in addressing one of the most significant disruptions to academic integrity in history.

Intellectual critique in the AI age

The 21st century's first quarter is defined by crisis (Popenici, 2023a). The COVID-19 pandemic not only triggered a global health emergency but also intersected with economic, political, and educational crises, forming what Tooze (2021) termed a *polycrisis*. Our era of cascading disruptions—climate catastrophe, democratic backsliding, economic precarity, and wars—has significantly impacted higher education. The role of intellectuals has never been more critical, yet the academy itself is deeply enmeshed in crisis.

Higher education and our world have been in perpetual crisis, beset by economic, socio-cultural, political, and ecological upheavals (Popenici, 2023a; Tooze, 2021; see Myth #7). In such a context, the role of the intellectual has never been more urgent. However, it regrettably remains as true today as it was 30 years ago when Edward Said argued in *Representations of the intellectual* that the term "intellectual" had become a dirty word—dismissed with a sneer and inextricably linked to the notion of an 'ivory tower', emblematic of detachment, irrelevance, and being out of touch (Said, 1994).

To reclaim the intellectual is to resist both the pressures of professionalisation and the demands of power. Said (1994) argues for an *amateur* intellectual—one who pursues knowledge not for profit or status but out of an "unquenchable interest in the larger picture" (p. 76). Intellectuals must refuse the narrow confines of specialisation and instead engage in moral critique, speaking truth to power regardless of the discomfort it may cause (Said, 1994). This, however, is precisely what makes intellectuals so unwelcome in today's pragmatic and technocratic society. They are neither passive consensus-builders nor tame facilitators of institutional knowledge but figures staked on a critical sense—willing, indeed *obliged*, to challenge the prevailing order (Said, 1994).

Historically, intellectuals have been cast as either harmless technicians or shrill Cassandras—ignored when they are right and ridiculed when they are wrong. But the role of the intellectual is neither total quiescence nor total rebelliousness; it is to "stir up debate and, if possible, controversy" (Said, 1994, p. 69). They must resist the "stereotyping and consequent death of genuinely living things" wrought by modern mass communication (Mills, 1963, p. 299). They must reject easy formulas and the comforting fictions of the powerful, for intellectual work is not about accommodation but confrontation (Adorno, 1951).

Intellectuals, then, are both insiders and outsiders—embedded in society but refusing to serve its dominant ideologies. As Joyce's Stephen Dedalus declared in *Portrait of the artist as a young man* (1916): *Non serviam*—I will not serve:

> "I will tell you what I will do and what I will not do. I will not serve that in which I no longer believe whether it call itself my home, my fatherland or my church: and I will try to express myself in some mode of life or art as freely as I can and as wholly as I can" (Joyce, 1916, n. p.).

The intellectual does not exist to legitimise the status quo but to scrutinise and challenge it. For Gramsci, intellectuals are everywhere; "all men [and women] are intellectuals", but not all perform the social function of the intellectual (Gramsci, 1971, p. 9). The task of the intellectual is to embrace this function—to interrogate, to unmask, and to resist. In an age of crisis, there is no more pressing duty.

In light of the observation that AI is neither entirely 'artificial' nor truly 'intelligent', intellectuals must reclaim and reinvigorate human intelligences to guide our ethical and critical engagement with technology. By foregrounding human insight over technocratic determinism, we can lay the groundwork for teaching critical AI literacy in higher education, ensuring that technology remains a tool for amplifying, not supplanting, our uniquely human capacities.

Conclusion: A call for teaching critical AI literacy in higher education

Our analysis attempted to debunk eight prevailing myths that continue to shape the discourse on GAI in higher education. First, the notion that 'AI is artificial' overlooks the fact that these systems are fundamentally built on human labour and data extraction, making them less autonomous than their label suggests. Second, the claim that 'AI is intelligent' is misleading; although AI systems can mimic human reasoning, they lack true understanding and lived experience, rendering their intelligence merely a statistical simulation. Third, the optimistic assertion that

AI will inherently render the world more democratic, equal, sustainable, and progressive ignores evidence that these technologies thus far have exacerbated inequalities and environmental degradation. Fourth, the idea that 'AI is objective and unbiased' is flawed, as AI systems inevitably replicate and even amplify biases present in their training data.

Fifth, the myth that the United States is the sole AI superpower disregards China's rapid ascent and significant contributions, which are reshaping the global AI landscape. Sixth, the belief that AI will not significantly affect the job market is increasingly untenable; automation driven by AI is already displacing workers and creating a surge in precarious, low-paid roles. Seventh, the claim that AI revolutionises higher education overlooks the detrimental impact on academic integrity and the erosion of traditional pedagogical practices as institutions struggle to adapt to the unchecked use of AI in assessments. Moreover, reduced government funding and a neoliberalist turn have meant that higher education has long been in crisis. Finally, the assumption that higher education teachers can reliably detect AI-generated content, with or without AI, is undermined by the evolving sophistication of these models, which increasingly produce outputs indistinguishable from genuine human work.

Table 1: AI myths versus our critical perspective.

	Myths	Our critical perspective
1	AI is artificial.	AI is fundamentally human-made, relying heavily on hidden human labour to function.
2	AI is intelligent.	AI does not exhibit true human intelligence but merely simulates cognitive processes through statistical pattern recognition, lacking understanding and lived experience.
3	AI will make the world a better place.	Rather than inherently improving societal conditions, AI frequently exacerbates existing inequalities and environmental degradation.
4	AI is objective and unbiased.	Far from being neutral, AI systems inherit and often amplify the biases embedded in their training data, rendering them inherently subjective.
5	The US is the one and only AI superpower and Big Tech has quasi-monopolies.	Global AI leadership is contested, with especially China rapidly advancing through state-supported initiatives and innovation, thereby challenging US dominance.
6	AI will not significantly affect the job market.	AI-driven automation is set to fundamentally alter labour markets by displacing jobs, deepening economic inequalities, and creating precarious employment conditions.
7	AI revolutionises higher education.	Instead of revolutionising learning, GAI risks eroding academic integrity and exacerbating structural issues in higher education, such as over-reliance on standardised assessments; the crisis of higher education is far from mitigated by AI.
8	Higher education teachers can detect AI-generated content with or without AI.	The increasing sophistication of AI-generated material renders detection methods unreliable, undermining traditional assessment practices and challenging the maintenance of academic standards.

Sam Altman recently opined that "Our phones control us and tell us what we do when social media feeds determine how we feel; search engines decide what we think" (cited in Vallor, 2024, p. 152). In our digital era, such statements underscore the overwhelming influence that technology exerts over our daily decisions and emotions. This pervasive control is akin to a drug dealer, who, recognising that addiction has already stripped us of our agency and hope, cajoles us into resignation rather than resistance (Vallor, 2024). This metaphor illustrates the danger of allowing digital platforms to dictate not only our actions but also our critical capacities, ultimately undermining our ability to think independently. Against this backdrop, we are reminded of Horace's and Kant's timeless exhortation *sapere aude*! (literally 'dare to know!') urging us to dare to think for ourselves and collaboratively reclaim our intellectual autonomy (Horace, 1883; Kant, 2001).

While our manuscript critically debunks GAI mythology, we acknowledge its practical application in our research. In preparing this manuscript, we utilised conventional word processing software (enhanced by Grammarly) alongside various iterations of ChatGPT for tasks such as generating APA7 references, paraphrasing, and brainstorming headers. It is important to emphasise that we carried out all conceptual thinking and interpretive analysis, with AI serving merely as an assistant (exactly the way AI should be used, in our view). GAI tools, such as ChatGPT, pose a threat to education. However, this risk stems less from their supposed intelligence than from educational systems that undervalue genuine human cognition (Luckin et al., 2024). Although these tools are often lauded as exhibiting human-like intelligence, they operate solely by generating text through probabilistic patterns, lacking true understanding (Chomsky et al., 2023). Their performance in assessments underscores an overreliance on memorisation rather than deep comprehension. To counter this, higher education must evolve to highlight the unique qualities of human intelligence. Curricula should move beyond rote learning to foster critical thinking and interpretative skills within traditional disciplines while integrating critical AI literacy (The Open University, 2025). Furthermore, for AI to genuinely enhance our lives, it is imperative to challenge the profit motives of tech giants, carefully determine which intellectual tasks should be delegated to machines and safeguard the distinctive attributes of human thought for future generations (Rudolph et al., 2023c).

Critical AI literacy must be at the forefront of higher education curricula as digital technologies reshape not only how knowledge is created and disseminated but also how it is critically appraised. In an era where GAI tools increasingly influence academic, professional, and public discourse, educators and students alike require the skills to discern between authentic human insight and algorithmically generated output. We recommend that higher education institutions embed critical AI literacy as a graduate attribute, as this literacy is essential for navigating the ethical, epistemological, and practical challenges posed by AI. Faculty professional development, innovative assessment methods, and metacognitive initiatives must converge to equip learners with the ability to critically evaluate digital content, challenge prevailing techno-optimistic narratives,

and mitigate the risks of misinformation.

Moreover, as AI becomes ubiquitous in pedagogical and administrative functions, higher education institutions must ensure that their graduates are not only proficient in using these technologies but also adept at interrogating their underlying biases and limitations. By integrating critical AI literacy into course design and review processes, educators can foster an environment where technology serves as a tool for enhancing human insight rather than replacing it. This approach will help counteract the tendency for digital automation to erode deep, reflective thinking, thereby sustaining academic integrity and promoting a more informed and engaged citizenry.

Acknowledgements

We gratefully acknowledge our *critical friends*, Dr Eunice Tan, Dr Samson Tan, and Dr Stefan Popenici, for commenting extensively on an earlier draft of this manuscript. All remaining errors and controversial statements are solely our own.

References

Abdalla, M., & Abdalla, M. (2021, July). The grey hoodie project: Big tobacco, big tech, and the threat on academic integrity. *Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society,* 287-297. https://doi.org/10.1145/3461702.3462563

Adams, R. [Richard] (2025, February 1). Quarter of leading UK universities cutting staff due to budget shortfalls. *The Guardian*. https://www.theguardian.com/education/2025/feb/01/quarter-of-leading-uk-universities-cutting-staff-due-to-budget-shortfalls

Adams, R. [Rachel] (2025). *The new empire of AI. The future of global inequality*. Polity.

Adorno, T. W. (1951). *Minima moralia: Reflections from damaged life*. Trans. E. F. N. Jephcott. New Left Books.

Altbach, P., & de Wit, H. (2020). Postpandemic outlook for higher education is bleakest for the poorest. *International Higher Education,* (102), 3-5.

Altman, S. (2023, May 16). *Testimony at "Oversight of A.I.: Rules for Artificial Intelligence" – Hearing before the U.S. Senate Judiciary Subcommittee on Privacy, Technology, and the Law.* Washington, DC: U.S. Senate Judiciary Committee. https://www.judiciary.senate.gov/meetings/oversight-of-ai-rules-for-artificial-intelligence

Altman, S. (2025, January 6). *Reflections*. Sam Altman's Blog. https://blog.samaltman.com/reflections

American Association of Colleges and Universities. (2025, January 22). *Higher education leaders navigate AI disruption.* https://www.aacu.org/newsroom/higher-education-leaders-navigate-ai-disruption

Andreessen, M. (2023, June 6). *Why AI will save the world.* Andreessen Horowitz. https://a16z.com/ai-will-save-the-world/

Andreessen, M. @pmarca. (2025, January 30). *Closed source, opaque, censorious, politically manipulative vs open source and free is not the winning position the US needs.* Tweet. X. https://x.com/pmarca/status/1884899150761992594

Anft, M. (2023). Perspectives on GenAI. College leaders assess the promise and the threat of a game-changing tool. Research brief. *The Chronicle of Higher Education.* https://connect.chronicle.com/rs/931-EKA-218/images/PerspectivesGenerativeAI_ResearchBrief.pdf

Attenborough, D. (2020). *A life on our planet. My witness statement and a vision for the future.* Witness Books.

Attewell, S. (2024, June 7). *Student perceptions of generative AI*. Jisc. https://www.jisc.ac.uk/reports/student-perceptions-of-generative-ai

Awarity.ai. (2025). *Beyond big: The end of the GAI hype cycle.* Medium. https://medium.com/awarity-ai-blog/beyond-big-the-end-of-the-gai-hype-cycle-66d40b31d1c4

Bashir, N., Donti, P., Cuff, J., Sroka, S., Ilic, M., Sze, V., Delimitrou, C., & Olivetti, E. (2024). *The climate and sustainability implications of generative AI: An MIT exploration of generative AI.* MIT GenAI. https://doi.org/10.21428/e4baedd9.9070dfe7

Bastani, A. (2020). *Fully automated luxury communism: A manifesto*. Verso.

Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency* (pp. 610–623). https://doi.org/10.1145/3442188.3445922

Berkowitz, R. (2022, June 15). *How to talk with an AI: A deep dive into "Is LaMDA Sentient?".* Curiouserinstitute. https://medium.com/curiouserinstitute/guide-to-is-lamda-sentient-a8eb32568531

Bloomberg. (2025, January 5). Bloomberg billionaires index. Bloomberg. https://www.bloomberg.com/billionaires/

Bostrom, N. (2014). *Superintelligence: Paths, dangers, strategies*. Oxford University Press.

Blumenstyk, G. (2015). *American higher education in crisis?: What everyone needs to know.* Oxford University Press.

Brevini, B. (2023). Myths, techno solutionism and artificial intelligence: Reclaiming AI materiality and its massive environmental costs. In S. Lindgren (Ed.), *Handbook of critical studies of artificial intelligence* (pp. 869-877). Edward Elgar Publishing. https://doi.org/10.4337/9781803928562.00086

Broussard, M. (2018). *Artificial unintelligence. How computers misunderstand the world.* The MIT Press.

Brown, T., Mann, B., Ryder, N., Subbiah, M., Kaplan, J. D., Dhariwal, P., ... & Amodei, D. (2020). Language models are few-shot learners. *Advances in Neural Information Processing Systems, 33,* 1877-1901. https://doi.org/10.48550/arXiv.2005.14165

Brynjolfsson, E. (2022). The Turing trap: The promise & peril of human-like artificial intelligence. *Daedalus, 151*(2), 272-287.

Bubeck, S., Chandrasekaran, V., Eldan, R., Gehrke, J., Horvitz, E., Kamar, E., ... & Zhang, Y. (2023). *Sparks of artificial general intelligence: Early experiments with GPT-4* [Preprint]. arXiv. https://doi.org/10.48550/arXiv.2303.12712

Caldarini, G., Jaf, S., & McGarry, K. (2022). A literature survey of recent advances in chatbots. *Information, 13*(1), 41. https://www.mdpi.com/2078-2489/13/1/41

Carlsson-Szlezak, P., & Swartz, P. (2024, August 15). Why AI will not lead to a world without work. *World Economic Forum*. https://www.weforum.org/stories/2024/08/why-ai-will-not-lead-to-a-world-without-work/

Cassidy, C. (2024a, August 1). Alarm bells over Australian universities' financial dependence on international students. *The Guardian*. https://www.theguardian.com/australia-news/article/2024/aug/02/australian-universities-international-student-fees

Cassidy, C. (2024b, October 26). A thousand Australian university jobs are at risk – who's to blame for the dire financial state? *The Guardian*. https://www.theguardian.com/australia-news/2024/oct/26/a-thousand-australian-university-jobs-are-at-risk-whos-to-blame-for-the-dire-financial-state

Cassidy, C. (2024, September 21). Lucy's job should be more secure – but at Australian universities, labour laws are having the opposite effect. *The Guardian*. https://www.theguardian.com/australia-news/2024/sep/22/lucys-job-should-be-more-secure-but-at-australian-universities-labour-laws-are-having-the-opposite-effect

Chaka, C. (2023). Detecting AI content in responses generated by ChatGPT, YouChat, and Chatsonic: The case of five AI content detection tools. *Journal of Applied Learning and Teaching, 6*(2), 94-104. https://doi.org/10.37074/jalt.2023.6.2.12

Chaka, C. (2024). Reviewing the performance of AI detection tools in differentiating between AI-generated and human-written texts: A literature and integrative hybrid review. *Journal of Applied Learning and Teaching, 7*(1), 115-126. https://doi.org/10.37074/jalt.2024.7.1.14

Chan, J., Selden, M., & Ngai, P. (2020). *Dying for an iPhone: Apple, Foxconn, and the lives of China's workers*. Haymarket Books.

Che, C., & Liu, J. (2023, March 16). China's answer to ChatGPT gets an artificial debut and disappoints. *The New York Times*. https://www.nytimes.com/2023/03/16/world/asia/china-baidu-chatgpt-ernie.html?action=click&pgtype=Article&state=default&module=styln-artificialintelligence&variant=show&region=BELOW_MAIN_CONTENT&block=storyline_flex_guide_recirc

Cheng, E. (2025, February 11). Chinese tech giant Baidu to release next-generation AI model this year as DeepSeek shakes up market. *CNBC*. https://www.cnbc.com/2025/02/12/china-tech-giant-baidu-to-release-next-generation-ai-model-this-year-as-deepseek-shakes-up-market.html

Chomsky, N., Roberts, I., & Watumull, J. (2023, March 8). Noam Chomsky: The false promise of ChatGPT. *The New York Times*. https://www.nytimes.com/2023/03/08/opinion/noam-chomsky-chatgpt-ai.html

Chumley, C. K. (2018, October 9). Google's disturbing DeepMind: Potatoes, potahtoes, A.I. could kill or could save. *The Washington Times*. https://www.washingtontimes.com/news/2018/oct/9/googles-deepmind-potatoes-potahtoes-could-kill-or-/

Clarke, L. (2023, March 2). *ChatGPT is so bad at essays that professors can spot it instantly*. Vice. https://www.vice.com/en/article/chatgpt-is-so-bad-at-essays-that-professors-can-spot-it-instantly

Conger, K., Mac, R., & Ngo, M. (2025, February 3). Musk Allies Discuss Deploying A.I. to Find Budget Savings: A top official at the General Services Administration said artificial intelligence could be used to identify waste and redundancies in federal contracts. *The New York Times*. https://www.nytimes.com/2025/02/03/technology/musk-allies-ai-government.html

Crawford, K. (2021). *The Atlas of AI: Power, politics, and the planetary costs of Artificial Intelligence*. Yale University Press.

Creamer, E. (2023, July 5). Authors file a lawsuit against OpenAI for unlawfully "ingesting" their books. *The Guardian*. https://www.theguardian.com/books/2023/jul/05/authors-file-a-lawsuit-against-openai-for-unlawfully-ingesting-their-books

De Vynck, G., & Tiku, N. (2023, March 21). Google's catch-up game on AI continues with Bard launch. *The Washington Post,* https://www.washingtonpost.com/technology/2023/03/21/bard-google-ai/

Dictionary.com. (n.d.). *Based*. In Dictionary.com. https://www.dictionary.com/e/slang/based/

Drozdowski, M. J. (2024, April 24). *Testing Turnitin's new AI detector: How accurate is it?* BestColleges. https://www.bestcolleges.com/news/analysis/testing-turnitin-new-ai-detector/

Dunn, W. (2024, August 6). When the AI bubble bursts. *New Statesman*. https://www.newstatesman.com/science-tech/2024/08/when-the-ai-bubble-bursts

Elliott, L. (2025, January 30). The west is already losing the

AI arms race. *The Guardian*. https://www.theguardian.com/commentisfree/2025/jan/30/ai-arms-race-china-deepseek

Fleming, P. (2021). *Dark academia: How universities die*. Pluto Press.

Fleming, P., Rudolph, J., & Tan, S. (2021). 'Never let a good crisis go to waste': An interview with Professor Peter Fleming on dark academia, the pandemic and neoliberalism. *Journal of Applied Learning and Teaching, 4*(2), 110-120. https://doi.org/10.37074/jalt.2021.4.2.14

Frankfurt, H. G. (2005). *On bullshit*. Princeton University Press.

Gándara, D., Anahideh, H., Ison, M., & Picchiarini, L. (2024). Inside the black box: Detecting and mitigating algorithmic bias across racialized groups in college student-success prediction. *AERA Open, 10*(1), 1–15. https://doi.org/10.1177/23328584241258741

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. Basic Books.

Garekar, B. (2025, January 28). China planned DeepSeek's dramatic debut on world stage to send signal to Trump: US AI expert. *The Straits Times*. https://www.straitstimes.com/world/united-states/china-planned-deepseeks-dramatic-debut-on-world-stage-to-send-signal-to-trump-us-ai-expert

Giannini, S. (2024, May 29). *Use AI in education: Deciding the future we want*. UNESCO. https://www.unesco.org/en/articles/use-ai-education-deciding-future-we-want

Gibney, E. (2025, January 30). China's cheap, open AI model DeepSeek thrills scientists. *Nature*. https://www.nature.com/articles/d41586-025-00229-6

Gibson, R. (2024, September 10). *The impact of AI in advancing accessibility for learners with disabilities*. EDUCAUSE Review. https://er.educause.edu/articles/2024/9/the-impact-of-ai-in-advancing-accessibility-for-learners-with-disabilities

Gould, S. J. (1981). *The mismeasurement of man*. W. W. Norton.

Grace, K., Salvatier, J., Dafoe, A., Zhang, B., & Evans, O. (2018). When will AI exceed human performance? Evidence from AI experts. *Journal of Artificial Intelligence Research, 62*, 729–754. https://doi.org/10.1613/jair.1.11222

Grace, K., Stewart, H., Sandkühler, J. F., Thomas, S., Weinstein-Raun, B., & Brauner, J. (2024). *Thousands of AI authors on the future of AI (Version 2) [Survey report]*. arXiv. https://doi.org/10.48550/arXiv.2401.02843

Gramsci, A. (1971). *The prison notebook: Selections*. International Publishers.

Gray, M. L., & Suri, S. (2019). *Ghost work: How to stop Silicon Valley from building a new global underclass*. Houghton Mifflin Harcourt.

Griffith, E., & Metz, C. (2023, March 14). 'Let 1,000 flowers bloom': A.I. funding frenzy escalates. *The New York Times*. https://www.nytimes.com/2023/03/14/technology/ai-funding-boom.html?action=click&module=RelatedLinks&pgtype=Article

Guterres, A. (2024, August 30). *Artificial intelligence 'must serve humanity equitably, safely', Secretary-General stresses, in message for International Day of Democracy*. United Nations. https://press.un.org/en/2024/sgsm22347.doc.htm

Hamid, R. D., & Schisgall, E. J. (2023, June 28). Nearly half of surveyed faculty pessimistic on AI impact in higher ed. *The Harvard Crimson*. https://www.thecrimson.com/article/2023/6/28/faculty-survey-5-ai/

Hammond, G. (2024, April 9). Elon Musk predicts AI will overtake human intelligence next year. *Financial Times*. https://www.ft.com/content/027b133f-f7e3-459d-95bf-8afd815ae23d

Hart, R. (2024, February 16). OpenAI's Sora has rivals in the works, including from Google and Meta. *Forbes*. https://www.forbes.com/sites/roberthart/2024/02/16/openais-sora-has-rivals-in-the-works-including-from-google-and-meta/?sh=700ecc282843

Hassoulas, A., Powell, N., Roberts, L., Umla-Runge, K., Gray, L., & Coffey, M. (2023). Investigating marker accuracy in differentiating between university scripts written by students and those produced using ChatGPT. *Journal of Applied Learning & Teaching, 6*(2), 71-77. https://doi.org/10.37074/jalt.2023.6.2.13

Hirsch, A. (2024, October 29). *The digital red pen: Efficiency, ethics, and AI-assisted grading*. Center for Innovative Teaching and Learning, Northern Illinois University. https://citl.news.niu.edu/2024/10/29/the-digital-red-pen-efficiency-ethics-and-ai-assisted-grading/

Horace. (1883). *The works of Horace translated literally into English prose* (C. Smart, A.M., Trans.; T. A. Buckley, Rev. ed.). Project Gutenberg. https://www.gutenberg.org/files/14020/14020-h/14020-h.htm

Huang, Z. (2023, March 21). China's first major chatbot doesn't need to be as good as ChatGPT. *Bloomberg*. https://www.bloomberg.com/news/newsletters/2023-03-21/baidu-s-ernie-bot-aims-to-be-first-in-chatgpt-free-market-in-china

Idris, M. D., Feng, X., & Dyo, V. (2024). Revolutionising higher education: Unleashing the potential of large language models for strategic transformation. *IEEE Access, 12*, 67738–67752. https://doi.org/10.1109/ACCESS.2024.3400164

Ifelebuegu, A. (2023). Rethinking online assessment strategies: Authenticity versus AI chatbot intervention. *Journal of Applied Learning and Teaching, 6*(2), 385-392. https://doi.org/10.37074/jalt.2023.6.2.2

Ismail, F. (in press). AI and bias: Parallels and paradoxes. In S. Popenici, J. Rudolph, F. Ismail, & S. Tan (Eds.), *Handbook of AI and higher education*. Edward Elgar.

Johnson, S., & Acemoglu, D. (2023). *Power and progress: Our thousand-year struggle over technology and prosperity.* Hachette UK.

Joyce, J. (1916). *The portrait of the artist as a young man.* Project Gutenberg. https://www.gutenberg.org/files/4217/4217-h/4217-h.htm

Kadence. (n. d.). *How AI is reshaping higher education in Singapore.* https://kadence.com/en-sg/how-ai-is-reshaping-higher-education-in-singapore/

Kande, M., & Sonmez, M. (2020, October 26). Don't fear AI. It will lead to long-term job growth. *World Economic Forum.* https://www.weforum.org/stories/2020/10/dont-fear-ai-it-will-lead-to-long-term-job-growth/

Kant, I. (2001). *What is enlightenment?* (M. J. Gregor, Trans.). Cambridge University Press. (Original work published 1784).

Kanter, J. (2018, December 11). "I lead this company without political bias": Google's CEO will send a message straight to Trump during high-stakes Congress grilling. *Business Insider.* https://www.businessinsider.com/sundar-pichai-google-ceo-sends-message-to-trump-congress-grilling-2018-12

Kara, S. (2023). *Cobalt red: How the blood of the Congo powers our lives.* St. Martin's Press.

Kelly, R. (2025, January 15). *3 areas where AI will impact higher ed most in 2025.* Campus Technology. https://campustechnology.com/articles/2025/01/15/3-areas-where-ai-will-impact-higher-ed-in-2025.aspx

Khan, S. (2024). *Brave new words: How AI will revolutionize education (and why that's a good thing).* Allen Lane.

Kim, J., Klopfer, M., Grohs, J., Eldardiry, H., Weichert, J., Cox, L. A., & Pike, D. (2025). Examining faculty and student perceptions of generative AI in university courses. *Innovative Higher Education*, https://doi.org/10.1007/s10755-024-09774-w

Knight, W. (2017, August 8). *Andrew Ng's next trick: Training a million AI experts*. MIT Technology Review. https://www.technologyreview.com/2017/08/08/150069/andrew-ngs-next-trick-training-a-million-ai-experts/

Kreps, S., & Kriner, D. (2023). How AI threatens democracy. *Journal of Democracy, 34*(4), 122–131. https://www.journalofdemocracy.org/articles/how-ai-threatens-democracy/

Kuang, W., Ziguras, C., & Williams, G. (2024, August 28). 'International students have been scapegoats': three perspectives on Australia's proposed overseas student caps. *The Guardian.* https://www.theguardian.com/education/commentisfree/article/2024/aug/28/australias-proposed-overseas-student-cap-isnt-just-about-dollars-its-about-people

Kurzweil, R. (2005). *The singularity is near.* Viking.

Kutty, S., Chugh, R., Perera, P., Neupane, A., Jha, M., Li, L., Gunathilake, W., & Perera, N. C. (2024, August 27). Generative AI in higher education: Perspectives of students, educators and administrators. *Journal of Applied Learning and Teaching, 7*(2), 47–60. https://doi.org/10.37074/jalt.2024.7.2.27

Labadze, L., Grigolia, M., & Machaidze, L. (2023). Role of AI chatbots in education: Systematic literature review. *International Journal of Educational Technology in Higher Education, 20*(1), 56. https://doi.org/10.1186/s41239-023-00426-1

Landymore, F. (2024, May 20). *Godfather of AI says there's an expert consensus AI will soon exceed human intelligence.* Futurism. https://futurism.com/the-byte/godfather-ai-exceed-human-intelligence

Lee, K. F. (2018). *AI superpowers: China, Silicon Valley, and the new world order.* Houghton Mifflin.

Li, F.-F. (2017, December 13). *Opening the Google AI China center*. Google Official Blog. https://blog.google/around-the-globe/google-asia/google-ai-china-center/

Lindgren, S. (2023a). *Critical studies of AI: Power, politics, and ethics.* Oxford University Press.

Lindgren, S. (2023b). Introducing critical studies of artificial intelligence. In S. Lindgren (Ed.), *Handbook of critical studies of artificial intelligence* (pp. 1-19). Edward Elgar Publishing. https://doi.org/10.4337/9781803928562.00005

Luckin, R., Rudolph, J., Grünert, M., & Tan, S. (2024). Exploring the future of learning and the relationship between human intelligence and AI. An interview with Professor Rose Luckin. *Journal of Applied Learning and Teaching, 7*(1), 1-18. https://doi.org/10.37074/jalt.2024.7.1.27

Mac, R. (2021, September 3). Facebook apologizes after A.I. puts 'primates' label on video of Black men. *The New York Times.* https://www.nytimes.com/2021/09/03/technology/facebook-ai-race-primates.html

MacAskill, W. (2015). *Doing good better: How effective altruism can help you make a difference*. Guardian Faber Publishing.

Mackay, C. (2003). *Extraordinary popular delusions.* Courier Corporation. (Originally published in 1841).

Madianou, M. (2021). Technocolonialism: Digital innovation and data practices in the humanitarian response to refugee crises. In *Routledge Handbook of humanitarian communication* (pp. 185-202). Routledge. https://doi.org/10.1177/2056305119863146

Marcus, G. (2024, December 13). *Humanity's "oh shit" AI moment*. Gary Marcus Substack. https://garymarcus.substack.com/p/humanitys-oh-shit-ai-moment

Marcus, G. (2025a, January 14). *AGI versus broad, shallow intelligence.* Gary Marcus Substack. https://garymarcus.substack.com/p/agi-versus-broad-shallow-intelligence

Marcus, G. (2025b, January 29). *OpenAI cries foul*. Gary Marcus Substack. https://garymarcus.substack.com/p/openai-cries-foul

Marcus, G. (2025c, February 16). *Elon Musk's terrifying vision for AI*. Gary Marcus Substack. https://garymarcus.substack.com/p/elon-musks-terrifying-vision-for

Marcus, G., & Davis, E. (2020, August 22). *GPT-3, Bloviator: OpenAI's language generator has no idea what it's talking about*. MIT Technology Review, https://www.technologyreview.com/2020/08/22/1007539/gpt3-openai-language-generator-artificial-intelligence-ai-opinion/?utm_medium=tr_social&utm_campaign=site_visitor.unpaid.engagement&utm_source=Twitter#Echobox=1598658773

Martin, N. (2019). 13 greatest quotes about the future of artificial intelligence. *Forbes*, https://www.forbes.com/sites/nicolemartin1/2019/06/27/13-greatest-quotes-about-the-future-of-artificial-intelligence/

McMurtrie, B. (2023, January 5). Teaching: Will ChatGPT change the way you teach?. *The Chronicle of Higher Education*. https://www.chronicle.com/newsletter/teaching/2023-01-05

Meotti, M., & Magliozzi, D. (2021, March 9). *Using artificial intelligence to navigate the new challenges of college and career*. Harvard Aadvanced Leadership Initiative, Social Impact Review. https://www.sir.advancedleadership.harvard.edu/articles/using-artificial-intelligence-to-navigate-the-new-challenges-of-college-and-career

Metz, C. (2022). *Genius makers. The mavericks who brought AI to Google, Facebook and the world*. Penguin

Michel-Villarreal, R., Vilalta-Perdomo, E., Salinas-Navarro, D. E., Thierry-Aguilera, R., & Gerardou, F. S. (2023). Challenges and opportunities of GenAI for higher education as explained by ChatGPT. *Education Sciences, 13*(9), 856. https://www.mdpi.com/2227-7102/13/9/856

Milanovic, B. (2016). *Global inequality: A new approach for the age of globalization*. Harvard University Press.

Mills, C. W. (1963). *Power, politics and people: The collected essays of C. Wright Mills*. Ballantine.

Mohammadkarimi, E. (2023). Teachers' reflections on academic dishonesty in EFL students' writings in the era of artificial intelligence. *Journal of Applied Learning and Teaching, 6*(2), 105-113. https://doi.org/10.37074/jalt.2023.6.2.10

Mok, A. (2023, May 3). It's not AI that is going to take your job, but someone who knows how to use AI might, economist says. *Business Insider*. https://www.businessinsider.com/ai-wont-take-your-job-someone-who-uses-it-might-2023-5

Monasterio Astobiza, A., Ausín, T., Liedo, B., Toboso, M., Aparicio, M., & López, D. (2022). Ethical governance of AI in the Global South: A human rights approach to responsible use of AI. *Proceedings, 81*(1), 136. https://doi.org/10.3390/proceedings2022081136

Monserrate, S. G. (2022). The cloud is material: On the environmental impacts of computation and data storage. *MIT Case Studies in Social and Ethical Responsibilities of Computing, Winter 2022*. https://doi.org/10.21428/2c646de5.031d4553

Moon, M. (2023, March 16). *Baidu unveils ERNIE Bot, its ChatGPT rival*. Engadget. https://www.engadget.com/baidu-unveils-ernie-bot-its-chatgpt-rival-105509006.html

Moorhouse, B. L., Yeo, M. A., & Wan, Y. (2023). Generative AI tools and assessment: Guidelines of the world's top-ranking universities. *Computers & Education Open*, 100151. https://doi.org/10.1016/j.caeo.2023.100151

Mozur, P. (2017, July 20). Beijing wants A.I. to be made in China by 2030. *The New York Times*. https://www.nytimes.com/2017/07/20/business/china-artificial-intelligence.htm
Muldoon, J., Graham, M., & Cant, C. (2024). Feeding the machine: The hidden human labour powering AI. Canongate.

Musk, E. [@elonmusk]. (2025, February 16). *Grok 3 is so based* [Tweet]. X. https://x.com/elonmusk/status/1891112681538523215

Natanson, H. (2025, February 3). Trump preps order to dismantle Education Dept. as DOGE probes data. *The Washington Post*. https://www.washingtonpost.com/education/2025/02/03/trump-education-department-dismantling-executive-order-draft/

National Academies of Sciences, Engineering, and Medicine. (2023, November 13). *How AI is shaping scientific discovery*. https://www.nationalacademies.org/news/2023/11/how-ai-is-shaping-scientific-discovery

Naughton, J. (2025, February 1). DeepSeek: Cheap, powerful Chinese AI for all. What could possibly go wrong? *The Guardian*. https://www.theguardian.com/technology/2025/feb/01/ai-deepseek-cheap-china-google-apple

Neuroscience News. (2023, July 6). *AI outperforms humans in creativity test*. https://neurosciencenews.com/ai-creativity-23585/

Nietzel, M. T. (2023, March 20). More than half of college students believe using ChatGPT to complete assignments is cheating. *Forbes*. https://www.forbes.com/sites/michaeltnietzel/2023/03/20/more-than-half-of-college-students-believe-using-chatgpt-to-complete-assignments-is-cheating/

Nolan, B. (2023, January 14). Two professors who say they caught students cheating on essays with ChatGPT explain why AI plagiarism can be hard to prove. *Business Insider*. https://www.businessinsider.com/chatgpt-essays-college-cheating-professors-caught-students-ai-plagiarism-2023-1

OpenAI. (2023a, March 7). *How can educators respond to students presenting AI-generated content as their own? OpenAI - Educator FAQ*. https://help.openai.com/en/articles/8313351-how-can-educators-respond-to-students-

presenting-ai-generated-content-as-their-own

OpenAI. (2023b, March 14). *GPT-4 [Technical report]*. https://openai.com/research/gpt-4

OpenAI. (2024, December 5). *Introducing ChatGPT Pro*. OpenAI. https://openai.com/index/introducing-chatgpt-pro/

Orwell, G. (1933). *Down and out in Paris and London*. Victor Gollancz.

Patel, N. (2023, November 7). Barack Obama on AI, free speech, and the future of the internet. *The Verge*. https://www.theverge.com/23948871/barack-obama-ai-regulation-free-speech-first-amendment-decoder-interview

Perkins, M. (2023). Academic integrity considerations of AI large language models in the post-pandemic era: ChatGPT and beyond. *Journal of University Teaching & Learning Practice, 20*(2), 07. http://dx.doi.org/10.53761/1.20.02.07

Perrigo, B. (2023, January 18). *Exclusive: OpenAI used Kenyan workers on less than $2 per hour to make ChatGPT less toxic*. Time Magazine. https://time.com/6247678/openai-chatgpt-kenya-workers/

Pew Research Center. (2021, August 19). *Some digital divides persist between rural, urban and suburban America*. Pew Research Center. https://www.pewresearch.org/short-reads/2021/08/19/some-digital-divides-persist-between-rural-urban-and-suburban-america/

Piketty, T. (2014). *Capital in the twenty-first century*. Harvard University Press.

Pimm, S. L., Jenkins, C. N., Abell, R., Brooks, T. M., Gittleman, J. L., Joppa, L. N., Raven, P. H., Roberts, C. M., & Sexton, J. O. (2014). The biodiversity of species and their rates of extinction, distribution, and protection. *Science, 344*(6187), 1246752. https://doi.org/10.1126/science.1246752

Pimm, S. L., Russell, G. J., Gittleman, J. L., & Brooks, T. M. (1995). The future of biodiversity. *Science, 269*(5222), 347–350. https://doi.org/10.1126/science.269.5222.347

Popenici, S. (2023a). *Artificial intelligence and learning futures: Critical narratives of technology and imagination in higher education*. Routledge.

Popenici, S. (2023b). The critique of AI as a foundation for judicious use in higher education. *Journal of Applied Learning and Teaching, 6*(2), 348-384. https://doi.org/10.37074/jalt.2023.6.2.4

Popenici, S., Rudolph, J., Tan, S., & Tan, S. (2023). A critical perspective on generative AI and learning futures.: An interview with Stefan Popenici. *Journal of Applied Learning and Teaching, 6*(2), 311-331. https://doi.org/10.37074/jalt.2023.6.2.5

Public Enemy. (1988, June). *'Don't believe the hype' lyrics*. https://www.google.com/search?client=firefox-b-d&q=don%27t+believe+the+hype+lyrics

Purpel, D. (1989). *The moral & spiritual crisis in education: A curriculum for justice and compassion in education*. Bergin & Garvey.

Rasul, T., Nair, S., Kalendra, D., Robin, M., de Oliveira Santini, F., Ladeira, W. J., ... & Heathcote, L. (2023). The role of ChatGPT in higher education: Benefits, challenges, and future research directions. *Journal of Applied Learning and Teaching, 6*(1), 41-56. https://doi.org/10.37074/jalt.2023.6.1.29

Reuters. (2025, February 12). *Trump says he wants education department closed immediately*. https://www.reuters.com/world/us/trump-says-he-wants-education-department-be-closed-immediately-2025-02-12/

Ripple, W. J., Wolf, C., Newsome, T. M., Galetti, M., Alamgir, M., Crist, E., Mahmoud, M. I., & Laurance, W. F. (2017). World scientists' warning to humanity: A second notice. *Bioscience, 67*(12), 1026–1028. https://doi.org/10.1093/biosci/bix125

Rudolph, J. (in press). The hidden labour in AI: Big Tech's dirty secret and the need for critical AI literacy in higher education. In S. Popenici, J. Rudolph, F. Ismail, & S. Tan (Eds.), *Handbook of AI and higher education*. Edward Elgar.

Rudolph, J., Crawford, J., Sam, C. Y., & Tan, S. (2024c). Introduction: Higher education in crisis. In J. Rudolph, J. Crawford, C. Y. Sam, & S. Tan (Eds.), *The Palgrave Handbook of crisis leadership in higher education* (pp. 1-15). Springer Nature.

Rudolph, J., Ismail, F., & Popenici, S. (2024a). Higher education's generative artificial intelligence paradox: The meaning of chatbot mania. *Journal of University Teaching and Learning Practice, 21*(6), 1-35. https://doi.org/10.53761/54fs5e77

Rudolph, J., Tan, S., & Aspland, T. (2023c). Editorial 6(1): Fully automated luxury communism or turing trap? Graduate employability in the AI age. *Journal of Applied Learning and Teaching, 6*(1), 7-15. https://doi.org/10.37074/jalt.2023.6.1.35

Rudolph, J., Tan, S., & Ismail, F. (2024b). Joyce's Odyssey. A celebration of human ingenuity in Ulysses and an indictment of the mediocrity of generative AI. *Journal of Applied Learning & Teaching, 7*(1), 7–21. https://doi.org/10.37074/jalt.2024.7.1.1

Rudolph, J., Tan, S., & Tan, S. (2023a). ChatGPT: Bullshit spewer or the end of traditional assessments in higher education? *Journal of Applied Learning & Teaching, 6*(1), 342-363. https://doi.org/10.37074/jalt.2023.6.1.9

Rudolph, J., Tan, S., & Tan, S. (2023b). War of the chatbots: AI and higher education. *Journal of Applied Learning and Teaching, 6*(1), 364-389. https://doi.org/10.37074/jalt.2023.6.1.23

Sahota, N. (2024, February 2). AI and the shadow over democracy: The rising threat to global elections. *Forbes*.

https://www.forbes.com/sites/neilsahota/2024/02/02/ai-and-the-shadow-over-democracy-the-rising-threat-to-global-elections/

Said, E. (1994). *Representations of the intellectual. The 1993 Reith lectures.* Vintage Books.

Salam, E. (2024, December 8). College enrollment is falling at a 'concerning' rate, new data reveals. *The Guardian*. https://www.theguardian.com/us-news/2024/dec/08/college-enrollment-declining

Salmi, J. (1992). The higher education crisis in developing countries: Issues, problems, constraints and reforms. *International Review of Education, 38*, 19-33.

Sankaran, V. (2023, April 18). Google DeepMind chief says 'there's a possibility' AI may become self-aware. *The Independent. h*ttps://www.independent.co.uk/tech/google-deepmind-ai-self-aware-b2321722.html

See, S. (2025, February 13). Trust is the world's most valuable currency, and DeepSeek shows China is in deficit. *The Business Times.*

Silberg, J., & Manyika, J. (2019, June 6). *Tackling bias in artificial intelligence (and in humans).* McKinsey Global Institute. https://www.mckinsey.com/featured-insights/artificial-intelligence/tackling-bias-in-artificial-intelligence-and-in-humans

Singer, A. (2024, September 9). *Stakes rising in the US-China AI race.* Global Finance Magazine. https://gfmag.com/economics-policy-regulation/us-china-competition-generative-ai/

Singer, N. (2018, July 26). Amazon's facial recognition wrongly identifies 28 lawmakers, A.C.L.U. says. *The New York Times*. https://www.nytimes.com/2018/07/26/technology/amazon-aclu-facial-recognition-congress.html

Sinofsky, S., & Casado, M. (2025, February 6). *Deepseek: America's Sputnik moment for AI*. a16z Podcast. https://a16z.com/podcast/deepseek-americas-sputnik-moment-for-ai/

Smart, S. (2017). Resistance against mining extractivism in Chile. *Critical Planning, 23.* http://dx.doi.org/10.5070/CP8231038128

Smith, B. (2023, February 2). *Meeting the AI moment: Advancing the future through responsible AI.* Microsoft, https://blogs.microsoft.com/on-the-issues/2023/02/02/responsible-ai-chatgpt-artificial-intelligence/

Stanford Institute for Human-Centered AI. (2024, November 21). *Global AI power rankings: Stanford HAI tool ranks 36 countries in AI. Stanford University.* https://hai.stanford.edu/news/global-ai-power-rankings-stanford-hai-tool-ranks-36-countries-ai

Strickland, E. (2022, February 22). *Yann LeCun: AI doesn't need our supervision.* IEEE Spectrum. https://spectrum.ieee.org/yann-lecun-ai

Suleyman, M., & Bhaskar, M. (2023). *The coming wave. AI, power and the 21st century's greatest dilemma.* The Bodley Head.

Sullivan, M., Kelly, A., & McLaughlan, P. (2023). ChatGPT in higher education: Considerations for academic integrity and student learning. *Journal of Applied Learning and Teaching, 6*(1), 31-40. https://doi.org/10.37074/jalt.2023.6.1.17

Susskind, D. (2021). *A world without work: Technology, automation, and how we should respond.* Penguin.

Tan, E., & Rudolph, J. (2023). Strategic sustainability in the Anthropocene. In A. de Moraes (Ed.), *Strategic management and international business policies for maintaining competitive advantage* (pp. 256-270). IGI Global.

Tan, S. (in press). Generative AI: Reshaping the future of work and learning. In S. Popenici, J. Rudolph, F. Ismail, & S. Tan (Eds.), Handbook of AI and higher education. Edward Elgar.

Tan, S., Rudolph, J., & Tan, S. (2024). Riding the generative AI tsunami: Addressing the teaching and learning crisis in higher education. In J. Rudolph, J. Crawford, C. Y. Sam, & S. Tan (Eds.), *The Palgrave Handbook of crisis leadership in higher education* (pp. 135-154). Springer Nature.

Tangermann, V. (2023, January 18). *College student caught submitting paper using ChatGPT.* Futurism. https://futurism.com/college-student-caught-writing-paper-chatgpt

The Economist. (2023a, July 23). American universities have an incentive to seem extortionate. https://www.economist.com/united-states/2023/07/23/american-universities-have-an-incentive-to-seem-extortionate

*The Economist. (*2023b, August 31). How artificial intelligence will affect the elections of 2024. https://www.economist.com/leaders/2023/08/31/how-artificial-intelligence-will-affect-the-elections-of-2024

The Economist. (2024a, September 19). China's AI firms are cleverly innovating around chip bans. The Economist. https://www.economist.com/science-and-technology/2024/09/19/chinas-ai-firms-are-cleverly-innovating-around-chip-bans

The Economist. (2024b, August 25). Is Xi Jinping an AI doomer? The Economist. https://www.economist.com/china/2024/08/25/is-xi-jinping-an-ai-doomer

The Economist. (2024c, January 21). Why America's controls on sales of AI tech to China are so leaky. The Economist. https://www.economist.com/business/2024/01/21/why-americas-controls-on-sales-of-ai-tech-to-china-are-so-leaky

The Economist. (2024d, June 15). The LLM summer sale: A price war breaks out among China's AI-model builders. The Economist. https://www.economist.com/business/2024/06/15/the-llm-summer-sale

The Economist. (2024e, July 23). AI firms will soon exhaust most of the Internet's data. The Economist. https://www.

economist.com/schools-brief/2024/07/23/ai-firms-will-soon-exhaust-most-of-the-internets-data

The Economist. (2024f, September 17). The broken business model of British universities. The Economist. https://www.economist.com/britain/2024/09/17/the-broken-business-model-of-british-universities

The Economist. (2025a, January 29). DeepSeek poses a challenge to Beijing as much as to Silicon Valley. The Economist. https://www.economist.com/business/2025/01/29/deepseek-poses-a-challenge-to-beijing-as-much-as-to-silicon-valley

The Economist. (2025b, January 27). DeepSeek sends a shockwave through markets. The Economist. https://www.economist.com/business/2025/01/27/deepseek-sends-a-shockwave-through-markets

The Economist. (2025c, February 13). How AI will divide the best from the rest. https://www.economist.com/finance-and-economics/2025/02/13/how-ai-will-divide-the-best-from-the-rest

The Open University. (2025). *A framework for the learning and teaching of critical AI literacy skills*. https://about.open.ac.uk/sites/about.open.ac.uk/files/files/OU%20Critical-AI-Literacy-framework-2025.pdf

The Philadelphia Inquirer (2019, September 4). *Racist risk assessment algorithms should not be the future of sentencing in Pennsylvania*. https://www.inquirer.com/opinion/editorials/risk-assessment-algorithm-tool-pennsylvania-sentencing-commission-20190904.html

Thibout, C. (2025, February 3). *The emergence of a Chinese AI superpower? Reflections on the DeepSeek case*. *Institut de Relations Internationales et Stratégiques (IRIS)*. https://www.iris-france.org/en/the-emergence-of-a-chinese-ai-superpower-reflections-on-the-deepseek-case/

Thorbecke, C. (2025a, February 1). Why Chinese tech keeps surprising the West. *The Business Times,* p. 3.

Thorbecke, C. (2025b, February 6). DeepSeek's breakthroughs are too big for the US to ban. *The Business Times*, p. 16.

Tooze, A. (2021). Shutdown: How Covid shook the world's economy. Viking.

U.S. Department of Education, Office of Educational Technology. (2023, May 30). *Artificial intelligence and the future of teaching and learning: Insights and recommendations.* https://www.ed.gov/sites/ed/files/documents/ai-report/ai-report.pdf

UNESCO. (2021). *Digital literacy for all*. https://en.unesco.org/information-society/digital-literacy

Vallor, S. (2024). *The AI mirror: How to reclaim our humanity in an age of machine thinking*. Oxford University Press.

Varanasi, L. (2024, July 29). AI won't replace human workers, but "people that use it will replace people that don't," AI expert Andrew Ng says. *Business Insider*. https://www.businessinsider.in/artificial-intelligence/news/ai-wont-replace-human-workers-but-people-that-use-it-will-replace-people-that-dont-ai-expert-andrew-ng-says/articleshow/112089975.cms

Vasquez, M., & Bauman, D. (2019, April 4). How America's college closure crisis leaves families devastated. *Chronicle of Higher Education*. https://www.chronicle.com/article/how-americas-college-closure-crisis-leaves-families-devastated/?sra=true

Verdicchio, M. (2023). Marking the lines of artificial intelligence. In S. Lindgren (Ed.), *Handbook of critical studies of artificial intelligence* (pp. 245-253). Edward Elgar. https://doi.org/10.4337/9781803928562.00027

Vincent, J. (2018, January 12). Google 'fixed' its racist algorithm by removing gorillas from its image-labeling tech. *The Verge*. https://www.theverge.com/2018/1/12/16882408/google-racist-gorillas-photo-recognition-algorithm-ai

Walters, W. H. (2023). The effectiveness of software designed to detect AI-generated writing: A comparison of 16 AI text detectors. *Open Information Science, 7*(1), 1–18. https://doi.org/10.1515/opis-2022-0158

Waltzer, T., Cox, R. L., & Heyman, G. D. (2023). Testing the ability of teachers and students to differentiate between essays generated by ChatGPT and high school students. *Human Behavior and Emerging Technologies,* 1–9. https://doi.org/10.1155/2023/1923981

Wang, J., Milne, C., Hu, J. Z., & Khan, F. (2024). *Navigating geopolitics in AI governance [OXGS Research Report]*. Oxford Global Society. https://oxgs.org/2024/04/08/oxgs-report-navigating-geopolitics-in-ai-governance/

Waring, P. (2024). Artificial intelligence and graduate employability: What should we teach Generation AI?. *Journal of Applied Learning and Teaching, 7*(1), 22-25. https://doi.org/10.37074/jalt.2024.7.1.42

Warschauer, M. (2003). *Technology and social inclusion: Rethinking the digital divide*. MIT Press.

Willige, A. (2023, October 31). How AI can speed scientific discovery, from predicting virus variants to vital protein research. *World Economic Forum*. https://www.weforum.org/stories/2023/10/ai-for-good-science-discovery/

Wodecki, B. (2023, February 4). *UBS: ChatGPT is the fastest growing app of all time*. AI Business. https://aibusiness.com/nlp/ubs-chatgpt-is-the-fastest-growing-app-of-all-time

Wooldridge, M. (2020). *The road to conscious machines: The story of AI*. Penguin UK.

Yalalov, D. (2023, January 18). *ChatGPT was taught by the world's poorest people*. Metaverse Post, https://mpost.io/chatgpt-was-taught-by-the-worlds-poorest-people/

Yang, Z. (2023, March 16). *Chinese tech giant Baidu just released its answer to ChatGPT*. MIT Technology Review. https://www.technologyreview.com/2023/03/16/1069919/baidu-ernie-bot-chatgpt-launch/

Young, L. (2023, December 14). *AI writing in academic journals: Mitigating its impact on research integrity*. Turnitin Blog. https://www.turnitin.com/blog/ai-writing-in-academic-journals-mitigating-its-impact-on-research-integrity

Yu, H. (2025, February 12). Open source and under control: The DeepSeek paradox. *The Business Times*, p. 15.

Zhai, C., & Wibowo, S. (2023). A systematic review on artificial intelligence dialogue systems for enhancing English as foreign language students' interactional competence in the university. *Computers and Education: Artificial Intelligence, 4,*100134. https://doi.org/10.1016/j.caeai.2023.100134

Zhang, B., Dreksler, N., Anderljung, M., Kahn, L., Giattino, C., Dafoe, A., & Horowitz, M. C. (2022). *Forecasting AI progress: Evidence from a survey of machine learning researchers*. arXiv. https://doi.org/10.48550/arXiv.2206.04132

Zitron, E. (2025, January 29). *Deep impact. Where's your ed at blog*. https://www.wheresyoured.at/deep-impact/