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Book review. Popenici, Stefan (2023). Artificial intelligence and learning futures. Critical narratives of technology and imagination in higher education. Routledge.

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Introduction

The poignant premise of Stefan Popenici's excellent book *Artificial Intelligence and learning futures* is that the English-speaking world faces multiple crises in higher education: ideological, intellectual, managerial, and ethical. Popenici argues against an all-too-common 'solutionism' or techno-chauvinism – by those terms, he and others refer to the prevailing belief that technology, particularly AI, is the ultimate solution to all these crises. His book delves into such an uncritical and naïve mindset within higher education and explores its underlying reasons.

AI deeply influences our lives, shaping our knowledge, perceptions, and worldviews. To reshape the narrative of higher education, Popenici argues that we must discern our aspirations and what influences them. By doing so, we can determine how to steer universities and their stakeholders away from a surveillance-driven, authoritarian dystopia. Such a 're-storying' (see Chapter 9) could pave the way for an educational vision that fosters a sustainable future and for teaching and learning in higher education institutions.

Artificial intelligence and learning futures consists of three sections subdivided into three chapters each. Although the book has only over 200 pages (including extensive references and a helpful index), it feels much more voluminous. Such a sentiment is not without reason: The publisher (Routledge) has put many words on the book's pages (a rough calculation of the words on a randomly chosen single page resulted in 550 words, which, assuming the generalisability of that random sample, would mean that the book has way in excess of 100,000 words), and the content is challenging – in the best sense of the word. Due to my being extremely busy, it took me a few weeks to read the book (and quite a few months to write this long-overdue book review). However, this bite- (or byte-)sized approach gave me a lasting impression of the book's major ideas and significantly changed my thinking on AI and higher education. In any event, the book does not render itself particularly well to speed-reading. Its three main sections are titled "Education, Artificial Intelligence, and ideology", "Higher learning", and "The future of higher education". Before critically evaluating it, I am offering my biased summary of its nine chapters.

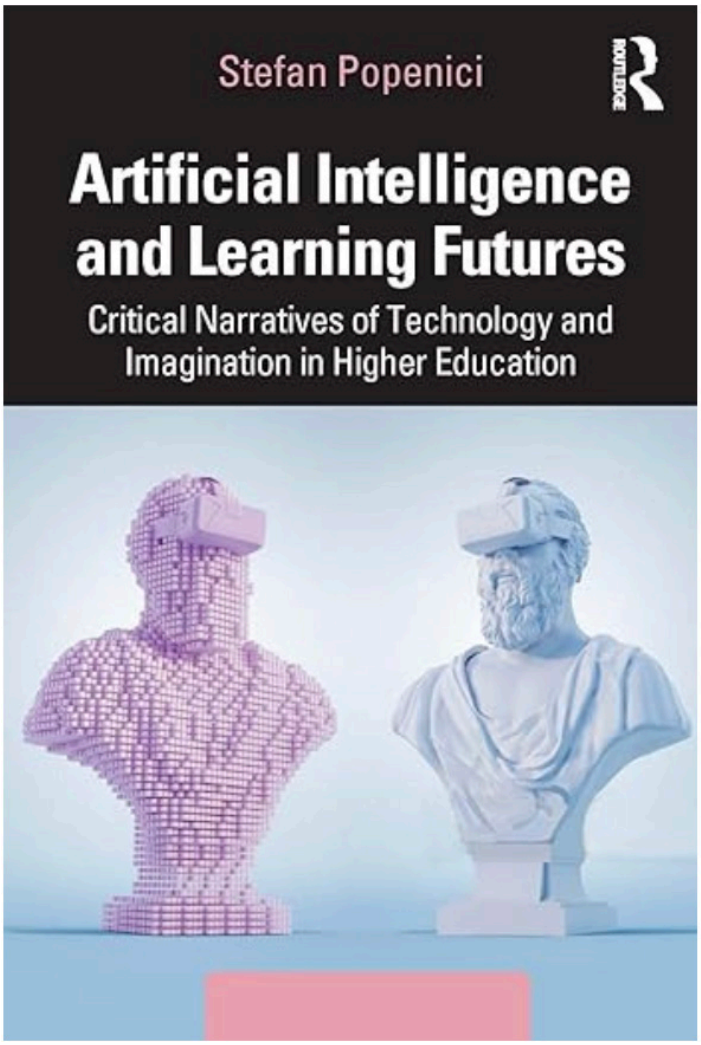

Figure 1: Book cover.

First, however, an introduction of the book's author, Stefan Popenici, is in order. He has a 25-year tenure in higher education encompassing teaching, research, and leadership across universities in Europe, North America, Southeast Asia, New Zealand, and Australia. Popenici is a respected scholar and sought-after public speaker whose significant contributions to education earned him the 'Merit of Education' Order from the President of Romania. His research centres on the implications of artificial intelligence in higher

education teaching and learning, as well as on quality assurance and student involvement. I should disclose that, together with Shannon Tan and Samson Tan, I interviewed the author (Popenici et al., 2023), and he has also written an excellent opinion piece for JALT (Popenici, 2023) – so this review is not without bias, and it could even be regarded as a companion piece to the aforementioned articles.

Education, Artificial Intelligence, and ideology

The first section of *Artificial intelligence and learning futures* delves into the concept of 'intelligence', tracing its ideological roots and its connection to the development of AI, particularly its application in education. It emphasises the significance of understanding the ideology behind intelligence for a comprehensive grasp of the swiftly evolving AI field, noting AI's ties to the 'Californian ideology' and its blend of vast opportunities and risks. Succinctly put, Popenici characterises the 'Californian Dream' as a tech-utopianism rooted in Ayn Rand's extreme individualism, advocating for unchecked resource exploitation and offering technological solutions as an escape route to other planets amid escalating climate crises. As higher education globally adopts AI for various purposes, it is crucial to examine the relationship between technology's colonising force and the inherent colonisation in the American model. The first section consists of three chapters: "The ideological roots of intelligence", "Imagination, education, and the American dream", and "The narrative construction of AI".

The first Chapter, "The ideological roots of intelligence", shows that the discourse on using intelligence – and later, AI – in modern society and higher education is deeply rooted in the eugenics theories of the late 19th and early 20th centuries. Galton propagated appalling racist ideologies, advocating for the control and elimination of what he deemed 'inferior groups', which included non-whites, the poor, and those he classified as 'criminals and semi-criminals'. His works laid a pseudo-scientific but highly influential foundation for the investigation of intelligence. Following in Galton's footsteps was Pearson, who justified widespread genocide against the First Nations in America using a dehumanised rationale. In another instance, he argued against integrating Jewish populations, labelling them as mentally and physically 'inferior' to the native populace.

This eugenic perspective gained traction in the United States in the 1920s, spurred by the intellectual frenzy surrounding the pseudo-scientific laws of heredity, which aimed to 'perfect' humanity. This period saw the emergence of theories that advocated controlling the reproduction of the 'feebleminded' and 'unintelligent', a stance widely adopted by American politicians, industrialists, and academics during the first half of the 20th century.

There is a little-known and deeply disturbing connection between American eugenics theories and the nefarious ideologies of Nazi Germany. Shockingly, even the Nazis found some US race laws too extreme to adopt, as the book documents. This era firmly established intelligence as a potentially dangerous concept utilised to justify controlling or eradicating groups seen as undesirable or threatening to the political elite. Since its inception by Galton, the concept of intelligence has been weaponised to serve the monopolies of social, economic, and political power. Popenici argues that even in the 21st century, the concept remains closely tied to eugenics. These extremely problematic ideological roots have opened up opportunities for misuse, for instance, by promoting class and ethnic discrimination.

The ideas formed in the eugenics era have shaped the development and implementation of AI, machine learning, and data analytics. Coined by John McCarthy in 1956, the term 'artificial intelligence' represents not just a set of algorithms but an ideological and political project inherently linked to its eugenic and elitist roots. The current trajectory of AI development, largely fuelled by American military investments and the interests of a techno-elite, risks perpetuating class and ethnic discrimination, posing significant challenges to fostering equity, transparency, and democracy. This direction is especially concerning in the field of education.

The second Chapter, "Imagination, education, and the American dream", links the challenges in defining intelligence to AI's susceptibility to exaggerations and misuse. It is refreshing that Popenici chooses a decidedly sobering and unenthusiastic definition, citing Bartoletti (2020, p. 23):

> To put it simply, AI is (so far at least) about machines performing a task that humans perform and which is possible only because we, humans, have taught them to do so. The thing we program them to do is to recognize and act upon the correlation between things (*intelligere*); things that for us, humans, make up some part of what constitutes life and experience.

The Internet, facilitated by companies such as Meta (formerly known as Facebook) and YouTube (owned by Alphabet, the parent company of Google), has become the most potent propaganda machine in history. These platforms' algorithms purposefully accentuate content that sparks outrage and fear, keeping users engaged. Major tech corporations like Alphabet and Meta refrain from revealing the inner workings of their algorithms. While we can ascertain the input and output of these systems, the intermediate process, termed the *black box* of technocracy, remains inaccessible to all but a handful of engineers (see Pasquale, 2015).

Popenici provides evidence for the existence of a Silicon Valley (or machine) religion that worships digitalism. Digitalism embodies the belief in surpassing human limitations, including death, through technological advancements. It envisions a redemption from the constraints of human brains and ageing bodies, akin to religious salvation. The Silicon Valley religion harbours an anti-human sentiment deeply embedded in major tech companies' technologies and business strategies that serve only a few 'chosen' ones, the technological and economic elites.

This machine religion positions AI as the beacon of hope via a narrative entrenched in 'solutionism'. AI has long been marketed as a catalyst for devising solutions to create a better world. This 'solutionist' approach simplifies

complex social issues into computable problems solvable by implementing the right algorithms. However, AI algorithms have sometimes produced discriminatory and erroneous outcomes with severe real-world repercussions, as evidenced by Amazon's Rekognition software misidentifying black members of the US Congress as criminals. It is also apt that Popenici reminds us of an unsung Soviet hero, Stanislav Petrov, who, by disregarding a false alarm from a satellite warning system, the most advanced technology of its time, prevented a nuclear Holocaust by not pressing the famous red button, risking his life in a totalitarian state and showcasing that technology can be fallible and that human judgment remains necessary.

The third Chapter, "The narrative construction of AI", reminds us, amongst other things, that the current AI solutionism is nothing new. It is, in fact, reminiscent of the incredible hype around MOOCs a decade ago (see Rudolph, 2014). MOOCs quite spectacularly failed in their promise of free and inclusive higher education. They were hyped as the remedy for perceived issues in the educational system, spurred by Silicon Valley narratives that technology could fix a 'broken' education system and provide free higher education for all. This led to a frenzied competition among universities to allocate substantial resources to this trend. However, a reality check shows MOOCs' limited impact. Despite the initial optimism, it became evident that MOOCs failed to revolutionise higher education. Contrary to the aspirations of democratising education, the courses mostly attracted individuals who were already graduates, thereby not addressing the educational needs of the underprivileged in dire need of educational opportunities, or the most significant problems confronting higher education.

Higher learning

The second section of the book is titled "Higher learning". It explores the ongoing identity crisis in higher education by examining the consequences of incorporating neoliberal ideologies in academia, including the rise of anti-democratic tendencies that prioritise profits over educational objectives. This trend, amplified by technology advancements, fosters increased surveillance of students and faculty alongside the commodification of education. The sector is also grappling with the influences of Americanisation and the inconsistent integration of market strategies, exacerbating the stress of audit cultures and the metrification of academic pursuits. Finally, the book's middle section strives to contextualise the role of AI within educational goals, aligning it with core human values such as an appreciation for learning, beauty, and passion.

In Chapter 4, "Automation of teaching and learning", Popenici persuasively posits that in the early 21st century, universities globally face a paradox where they are simultaneously more numerous and important than ever before yet grappling with an unprecedented crisis of confidence and identity. This crisis is compounded by the neoliberal model of metrification, which, despite failing notably in sectors like finance, for instance, during the 2007-2008 Great Financial Crisis, continues to permeate the education sector. "Bean counters and accountants decide what is real, but behind them is a grab of power with an unprecedented capacity to colonise and incorporate all aspects of our lives" (p. 94). The approach of treating education as a marketable commodity emerges as a destructive force for the future of society.

The metrification of higher education poses a stark shift from genuine learning to a focus on test results and quantifiable outcomes, leaving education bereft of depth and relevance. Current educational environments pressure even the most eager students to learn merely for test performances, side-lining a comprehensive education's intrinsic joy and vigour. This pervasive metrification emphasises quantifiable judgments and fosters a culture of surveillance and metrics at the expense of substantial academic growth, instilling a culture of 'efficiency' and suspicion that breeds increasing levels of stress and anxiety in the academic community. It is a fallacy that only what can be counted counts. I was reminded of a quote frequently attributed to Albert Einstein: "Not everything that can be counted counts, and not everything that counts can be counted".

Popenici's critique of metrification certainly struck a chord with me. It is a symptom of the many things that have gone wrong in higher education and a theme that has been explored in many publications (see, for instance, Parker, 2018; Tourish, 2019; Fleming, 2021; Fleming et al., 2021; Parker et al., 2021; Brookfield et al., 2024). I would have been inclined to see the beginnings of the neoliberal era and its by-product of metrification in higher education with the Reagan and Thatcher governments (see Fleming, 2021). Popenici's additional bringing of the Democratic presidency of Bill Clinton into the metrification picture was nothing short of revelatory.

Since the Clinton era, the US education model has become infatuated with performance-based accountability, emphasising universities' return on investments (ROI). Institutions like the OECD and the World Bank have been fervent advocates of this model, fostering a broader Americanisation of the global education landscape. However, this model seems to cultivate an elite corporate class while relegating learning to a secondary role and leaving the majority in a struggle for survival amidst a backdrop of falling education standards and an ongoing identity crisis in universities.

In this chapter, Popenici returns to the book's pervasive theme of AI's false promise as a panacea. AI, exemplified by IBM's Watson, has been touted as a universal solution for numerous societal issues ranging from healthcare to education. Despite the relentless promotion and high expectations, the advancements have been considerably less impressive.

In Chapter 5, "Surveillance, control and power – the AI challenge", Popenici refers to OECD's important and critical study on EdTech (2015). The report reveals that while moderate computer usage in schools can be beneficial, "resources invested in ICT for education are not linked to improved student achievement in reading, mathematics or science" (p. 104). Importantly, in countries where Internet use for school assignments is less prevalent, improvements in reading were observed to be faster.

Popenici underscores that the liberalisation and privatisation of education have restricted intellectual freedom, encouraging rigid managerial control structures and predisposing universities to mediocrity and groupthink tendencies. In the contemporary university setting, EdTech is being employed as "technologies of domination", as AI vigorously encourages students and teachers to acquiesce to manipulative oversight and surveillance, fostering a culture of apathy and resignation (p. 115). The sixth Chapter picks up from the third, where Popenici already touched on the perils of surveillance in higher education. Incorporating pervasive surveillance as a fundamental component is "poisonous for any educational project" (p. 60). Rather than relying on software solutions to combat plagiarism, it is more prudent to address the issue's root causes. Viewing students as potential "thieves" and "criminals" requiring constant monitoring contradicts the essential ethos of higher education (p. 60).

Chapter 6 is titled "Beauty and the love for learning". It is a critically important argument of Popenici's book that the current predicament in the higher education sector goes way beyond its technological issues; it is deeply embedded in a series of interlinked crises that span the intellectual, moral, and ontological spheres. These crises manifest themselves as a stark escalation in climate change, driven by unrestrained exploitation of the Earth's resources and the exacerbation of political and cultural instability, fostering wars and escalating violence globally. Moreover, the COVID-19 pandemic has unveiled deep-rooted issues in even the most developed nations, showing a startling lack of compassion, civility, and education, as market profits have overtaken the importance of life itself. Despite the availability of scientific solutions, significant segments of the world's population seem disinterested or unable to grasp the gravity of the situation, displaying an inability to comprehend how science could construct a collective response to our looming challenges. The 'polycrisis' has become a 'perma-crisis'.

At this critical juncture, the focus of higher education should be realigned. Instead of solely advancing technology, it should contemplate the true objectives of higher learning: fostering a civil society, nurturing a wise citizenry, and working towards creating sustainable futures for everyone. Universities should emphasise genuine education over mere credentialism and engage actively in shaping a better collective future. However, there is a worrying move in a direction that unduly focuses on technological solutions that miss the essence of education. In Popenici's view, an example of this is the booming industry centred around plagiarism detection, which operates on a fundamental distrust of students and represents a glaring failure in the educational process. These measures, often lacklustre in their effectiveness, signify a pivot towards commercialisation and a detachment from the true objectives of education.

Popenici argues that the increasing reliance on EdTech, particularly AI, seems to be driven by a baseless optimism without considering its limitations and the responsibilities it entails for educators. This blind faith threatens to overlook the integral aspects of humanity – love, beauty, passion, and inspiration – turning the educational process into a commercial, hollow, and artificial endeavour that side-lines the innate human elements that should be at its core.

Therefore, it is imperative to approach the integration of AI in education with cautious scepticism, scrutinising the claims of financial consultants and corporate behemoths who stand to profit from the EdTech market. Furthermore, an in-depth analysis of the 'EdTech imaginary' is necessary to critically evaluate how new technologies influence teaching and learning processes, especially considering the opaque nature of AI and its implications in data collection and utilisation.

To circumvent our ontological decline, it is vital to resist being overwhelmed by the dazzling technological advances to the point where calculative thinking becomes the sole accepted method of reasoning. With repeated references to the German philosopher Martin Heidegger, Popenici posits that preserving diverse forms of critical thinking is essential to prevent succumbing to the bewitching allure of technological advancements, which threaten to eclipse other vital forms of intellectual engagement.

The future of higher education

The book's final section is titled "The future of higher education". It delves into the potential role of imagination in education and examines the intersection of intelligence, imagination, and AI. While considering the prospective directions of education, it underscores that the principal hurdles at the outset of the 21st century for universities and open societies are political, educational, and cultural rather than technological. Our current period of technological acceleration is marked by a concerning global surge in authoritarian ideologies and a growing socioeconomic and cultural divide. It foresees AI becoming a central element in the future trajectory of education, posing opportunities and challenges for educational institutions. The final section proposes vital guidelines for responsibly incorporating AI in higher education, aiming to guide educators and students towards an ethical and productive integration of AI systems in the quest for purposeful education.

In Chapter 7, "Imagination and education", Popenici dismisses the belief that the eugenic foundations of AI are relegated to history as naïve and unrealistic, as they can be observed in current political strategies and technological projects. Currently, the discussion surrounding AI in education is largely governed by commercial narratives, neglecting essential education objectives such as empathy and compassion and thus risking the fostering of a society prone to cruelty and greed, devoid of human values. The major challenges facing humanity are cultural and moral rather than technological. This context reflects a society engulfed in transient and superficial information, promoting fleeting interests, which can be seen as a colonisation of the educational sphere by corporate interests, pushing tech solutions and neoliberal policies. Although Popenici does not appear to refer to Habermas (1985) in this discussion explicitly, it has the latter's discourse on the overall colonisation of the lifeworld (*Lebenswelt*) written all over it.

The modern higher education narrative is dominated by a business-oriented approach, side-lining the importance of imagination, inspiration, and empathy. The corporate sector's influence has led to an education system deeply entrenched in technocracy and commercial interests, prioritising profitability and efficiency over fostering imaginative and empathetic minds. This shift signals a dangerous colonisation of the educational imagination, where the field is now overwhelmed with cynical and profit-driven approaches, likening educational institutions to profit-centric businesses, thereby undermining the rich history and contributions of academic institutions to society.

In Chapter 8, "Scenarios for higher education", Popenici reiterates his point that in light of escalating crises, it is crucial to scrutinise the actual effectiveness of EdTech and AI in enhancing education, particularly when the successful outcomes have been claimed ad nauseam, but the actual quality of higher education seems to be deteriorating. Since the 1990s, there has been a repetitive narrative surrounding AI as a revolutionary tool for educational institutions. However, in Popenici's argument, this alleged 'innovation' appears to be a tactic to dominate and monetise educational spaces, with little real progress observed over the decades.

It is telling that Popenici finds a speech by the comedian Sacha Baron Cohen to be of particular value in this context. Cohen highlighted the pernicious effects of social media platforms, which use algorithms to amplify content that engenders fear and outrage, often disseminating falsehoods and promoting hate at a pace faster than truth can spread, thus serving as formidable propaganda machines. Popenici also observes a worrying trend of diminishing human intelligence as AI technologies advance. The essence and purpose of universities are under threat, with a shift towards commercialisation and the diminishing of critical thinking and democratic values amongst graduates. This is exacerbated by university leaders adopting a corporate approach, prioritising business interests over intellectual growth and enriching learning environments.

The looming threat of the commodification of education is evident in the adoption of business models from exploitative corporations and the employment of AI primarily for profit maximisation and cost reduction rather than fostering higher cognitive skills and meaningful learning. Lastly, AI's pervasive influence in daily life, as demonstrated by Facebook's (now Meta) developments, underscores the potential for manipulation and the propagation of harmful stereotypes and discriminatory content, posing a considerable risk to societal values. The current educational landscape is marred by an uncritical embrace of technology, thus contributing to the concurrent decline in intellectual engagement, civic relevance, and true educational value.

In the book's final chapter, "Re-storying higher learning", Popenici cleverly summarises that the marketing plot of AI propels the idea of an unavoidable tech-driven evolution in education, promising a personalised approach akin to a Netflix (or Amazon) model of higher education. In contrast, he offers five guiding principles for the responsible and constructive use of AI.

The first guiding principle urges higher education institutions to meticulously evaluate the budgetary and ethical aspects of data collection and aggregation, considering potential costs, privacy concerns, and legal implications while actively involving students in the process before implementing AI systems. The second principle emphasises that universities must constantly scrutinise AI's inherent biases and corporate influences, urging them to prioritise intellectual curiosity and critical thinking over adopting exploitative EdTech, thereby preventing a potential drift towards authoritarianism and narrowed educational experiences. The third principle states that while AI can serve as a valuable tool for facilitating access to information and administrative tasks in education, it should not replace human educators, as it lacks the ability to offer a nuanced, meaningful, and creatively stimulating education that fosters independent thinking and responsible citizenship.

The fourth principle emphasises that the effectiveness and fairness of AI in education are deeply influenced by the social, economic, cultural, and political contexts, and without considering these variables, the use of AI can potentially be more detrimental than beneficial in achieving educational and organisational objectives. The final principle highlights the necessity to carefully select the appropriate EdTech/AI solution that aligns with the institution's goals and fosters a meaningful education that cultivates responsible, engaged, and mentally agile members of society without diverting focus from the core mission of nurturing well-rounded individuals.

Towards the end of his book, Popenici proposes a pledge for academics to adopt AI in education. This pledge emphasises committing to an equitable, compassionate, and reflective pedagogy prioritising students' learning needs and rights. It encourages fostering an environment of intellectual curiosity and moral development, thereby nurturing mutual trust between students and educators. Moreover, the pledge advocates the protection of students from intrusive data practices, coupled with a continuous effort to enhance the quality and inclusivity of education, fulfilling the profound responsibilities inherent in the role of academics.

A critical evaluation

My review is extensive by design, as outstanding books like this one are few and far between, necessitating a widespread exploration of its significant themes. I am unable to pinpoint any shortcomings within this masterful work. It is a treasure trove of well-curated references, showcasing Popenici's generous and due acknowledgement of his sources. With its firmly grounded humanistic approach, the book vehemently opposes authoritarian inclinations found in both the political right and left. Bridging critical analysis with humour and a palpable sense of hope, *Artificial intelligence and learning futures* provides a rich, multifaceted reading experience.

Despite the advent of the ChatGPT 'revolution' after the book's completion, its relevance remains unscathed. Popenici's insightful critiques resonate profoundly with the ongoing developments in chatbot technologies and related phenomena, a trajectory he has pursued further in

subsequent publications (Popenici, 2023; Popenici et al., 2023). I wholeheartedly endorse this pivotal book, urging a broad readership encompassing governmental and educational leaders, academics, postgraduate students, and anybody interested in the domains of AI and EdTech to immerse themselves in its contents.

In an era where the prevailing crises are increasingly conspicuous, the necessity to redefine the essence of a well-rounded higher education has never been as important as it is now. Surpassing the confines of mere job readiness or intellectual prowess, we must cultivate an educational ethos centred on holistic development. It is imperative to move beyond the mere quantitative assessment propagated by current neoliberal and technocratic ideologies to cultivate a generation of individuals who are not just well-informed but truly well-educated.

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