Defining a Technocritical Approach to AI Adoption in the Global South: Perspectives from Higher Education

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Introduction

Artificial Intelligence (AI) has significantly disrupted the higher education (HE) sector, particularly with the recent rise of freely accessible large language models (LLMs) (Chu et al., 2022). These content-generating systems present both challenges and opportunities in classroom instruction, curriculum design, and academic integrity.

AI technologies are mainly developed by the Global North and subsequently adopted by the Global South (Baidoo-Anu et al, 2024). However, AI's decontextualised nature often fails to address Global South realities. While Global North-focused research on AI is abundant, studies on its impact in the Global South, especially Africa, are limited (Crompton & Burke, 2023).

This paper discusses the implications of AI-powered LLMs (or Generative AI, 'GenAI') that reflect Global North biases, potentially constraining the critical and dialogic thinking fundamental to higher education. While these technologies can support certain aspects of teaching and learning, they may hinder Global South students' educational experiences. AI tools, despite their ability to simulate human-like dialogue, lack intentionality, critical thinking, and the capacity for generating novel ideas Tsao, J. & Nogues, 2024). They also fail to represent the local contexts of many Global South cultures, as these are under-represented in the datasets on which the tools are trained (Jaiswal et al, 2024). Consequently, AI cannot substitute the educational value of engaging with perspectives relevant to students' lived realities, nor can it address the tension of maintaining indigenous identity in Global South curricula when encountering Western dominance in AI technologies.

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It will remain paramount, in future, for Global South graduates to be able to draw on their own, authentic voice to contribute to the curriculum. Their lived experiences and valid, and at times contrasting, diverse and perhaps even opposing, worldviews are essential to the tensions and discomfort that enable learning (Harding, 2004; Haraway, 2004). In this article, we highlight the aspects of AI that hinders this very messy and entangled nature of human engagement in learning. We consider the implications of Global South students increasingly relying on Western-dominated content- that can be instantly generated.

To ensure effective adoption of AI in HE in especially the Global South, this paper advocates for a balanced, technocritical approach, which involves the intellectual labour of continually posing difficult questions, while taking iterative and participatory actions. A South African case study illustrates this approach in the context of curriculum design. This paper concludes with recommendations for HE practitioners, especially in the Global South, on adopting a technocritical stance for future human-machine collaboration. Lastly, proposing that technological development and adoption be participatory and collaborative, ensuring that local, Global South contexts are genuinely accounted for -- enabling students and HEIs to thrive.

Background and context

AI's pervasive presence in contemporary society is undeniable, particularly in HE, following ChatGPT's emergence as a mainstream tool in late 2022 (Birks & Clare, 2023). Open AI's launch of ChatGPT, a 'large language model,' marked a pivotal moment in the AI field, sparking widespread media coverage and leading to what many consider a research hype (Jandrić, 2024). As more LLM chatbots became publicly accessible, their impact on academia intensified, resulting in a surge of AI-related publications in HE scholarship (Crompton & Burke, 2023).

The literature underscores the urgency for HE institutions to adapt swiftly to an AI-driven educational landscape. However, this evolving body of scholarship also reflects a collective sense of uncertainty, as fundamental questions are raised about academic work, knowledge, and learning (Bearman et al., 2022; Kramm & McKenna, 2023). Key research themes include the evolving pedagogical implications of AI (Bates et al., 2020), the development of AI policies in universities (Chan, 2023), AI's role in

assessment (Crompton & Burke, 2023), and its influence on managing learning data (Bearman et al., 2022).

This rapidly growing body of literature on AI in HE is largely dominated by Global North perspectives (Holmes & Miao, 2023). For over a decade, there have been concerns about the underrepresentation of the Global South in AI debates, with key issues such as the digital divide in diverse Global South contexts often being overlooked (Baidoo-Anu et al., 2024; Garcia, 2019). Although voices from Southern Asia, Southern and Latin America and the Caribbean, and Africa are increasingly present in the global AI discourse (Kak, 2020; Okolo & Dell, 2020), the narrative remains skewed toward Global North -centricity.

This paper uses broad terms (e.g., Global North, Global South, and AI) and it needs to be acknowledged that these labels can lead to essentialist and reductionist discourses. To mitigate this, this paper's interpretation of these terms is as follows:

The Global North generally refers to wealth and power distribution in regions like North America, Europe, and Australia, while the Global South tend to refer to regions that are economically less developed, such as Africa, South- East Asia, Latin America, the Caribbean, and Oceania (Parnell, 2016). This broad division is not only geographic but also epistemological, as highlighted in Santos' (2016) work on Epistemologies of the South, which critiques the GN's domination and its marginalisation of Global South knowledge.

In terms of AI, this paper focuses on 'large language models' (LLMs), a specific strand within the broader field of AI, exemplified – at the time of publishing - by OpenAI's ChatGPT, Meta's LLaMA, and Google's Bard and Gemini. These machine learning systems generate content using vast amounts of data, with significant implications for HE, such as simulating human conversations, creating unique content, and mining student data (Birks & Clare, 2023; Selwyn et al., 2019).

To discuss AI as a critical pedagogical tool in the Global South, this paper employs a technocritical theoretical framework.

A New Perspective: A Technocritical Approach

There have been mixed responses to the current technological supercycle, which can be measured across a binary of technological pessimism anxiety and a near utopian technological optimism (Chan 2023). While within these two extremes, there are those who adopt technology critically and with a measure of curiosity and caution. This group understands that technology itself does not determine or shape the collective future but is understood as intertwined with social relations, and it is here where the future of technology can be determined (Chan 2023; Miller 2020). This position is critical to this paper's considerations regarding the adoption of AI in HEIs in the Global South. The technology itself has not transformed HEIs but rather it is the uptake of the technology by institutions, academics, and students (in particular) that have resulted in this disruptive turn in HE. The technology-human relationship is critical in our understanding of technology uptake and the subsequent disruptions and transformation of fields such as HE.

In light of the current technological supercycle, a new perspective is necessary for grappling the technological disruptions and consequences for individuals, communities, industries, and society. While technorealism (technorealism.org 1998; McCluskey 1998) is a helpful perspective for thinking and working with technology in relation to society, it requires a critical edge that pushes it further into the space of interrogating the manner in which power plays out between technology and human actors. For instance, technorealism acknowledges the influence of technology but does not necessarily engage in the critical work around technology production and adoption, such as has been seen in the case of Global North technologies uncritically adopted by the Global South in the hopes of staying on top of the latest technological developments. Drawing on critical theory, a technocritical approach is proposed as a means of enabling the foundational work of technorealism to bring a critical perspective to technology. This paper suggests a technocritical approach is best suited to discussions on AI and technological disruptions, particularly in the Global South context. It is through a technocritical lens that the power relations among human actors and the technologies they design, develop, produce and use can be interrogated and rendered visible, instead of assuming that no such power relations are present.

Technorealism

Technorealism is a realist approach to technological developments and the social and political implications thereof (technorealism.org 1998; McCluskey 1998). Technorealism emerged out of a response to the binary logic of technological deterministic with technological optimism and technological pessimism as the two poles. Technorealists argued for, instead, a measured view of technology, one which expanded the space between technological optimism and technological pessimism (technorealism.org 1998; McCluskey 1998; Tolu 2019). Technorealism critiques technological determinism for its inability to account for human agency or societal influence over technology (Dafoe 2015). Technological determinism sees technology – such as AI, as determining societal transformation (Chan 2023; Héder 2021; Miller 2020). Technological determinism understands technologies to be "drivers in 'the progress' (or sometimes 'decline') of society and culture" while society – individuals and institution are seen to be "passive in the disruption" (Miller 2020: 3).

Thus, a technological determinist perspective sees technology as that which happens to humans, instead of that which is taken up by humans to serve various purposes. This perspective is not useful for thinking critically about the nature of the technology being adopted by Global South HEIs, as the power associated with said technologies comes to be unevenly portrayed as lying with the tools or the mechanisms of technology and not how it is used by human actors. What is at risk here is that there is then an "imbalance" where "human agency can be sidelined in discussions around emerging technologies, despite human decision-making being the most fundamental locus for controlling AI" (Chan 2023: 57). To ignore the matter of human agency is to ignore the control that people have over the uptake of technological tools, and while individuals may not have a say over which technology is adopted in their work environment, such as HEIs, there are other individuals who do determine this uptake. Here then, technological adoption becomes a matter of power as played out among human actors. This is critical in discussions around AI's dominance and the disruptions brought about through its exponential uptake. This is especially in light of the Global North sites of production of technology and the

implications that this has for students' learning and accounting for their lived experiences.

This issue of power in relation to technology is of interest in this paper's theoretical framing. Technorealists, in their statement "Principles of Technorealism" offered eight principles of technorealism, among which is the first principle, that "technology is not neutral" (McCluskey 1998; technorealism.org 1998). This principle comes closest to addressing the matter of power in relation to technology:

> "A great misconception of our time is the idea that technologies are completely free of bias -- that because they are inanimate artifacts, they don't promote certain kinds of behaviors over others. In truth, technologies come loaded with both intended and unintended social, political, and economic leanings. Every tool provides its users with a particular manner of seeing the world and specific ways of interacting with others. It is important for each of us to consider the biases of various technologies and to seek out those that reflect our values and aspirations" (Technorealism.org 1998)

While technorealists did well to highlight that technology is not neutral, that technologies are not free of bias, and are "loaded with both intended and unintended social, political, and economic leanings" (Technorealism.org 1998), there is no explicit statement made on the nature of power as it relates to technology. That is, a critical stance on technology is not explicitly taken. Such a position is needed in order to inform AI and technological adoption in the Global South context.

It is critical that technology, such as AI, be understood in relation to power and the implications thereof for society. An approach which takes into consideration power is briefly hinted at in the statement regarding the neutrality of technology. However, it does not advance beyond this point. As Kellner (2021: 8-9) indicates, technorealism "advocates lack adequate theorizing of the emergent technologies and robust critique, as the technorealists for the most part failed to theorize the technologies within the framework of their imbrication of a restructuring of global capitalism and in addition do not articulate an adequate standpoint of critique" (Kellner 2021: 8-9). This is evident in the reading of the technorealists' work, which largely exists as a website and a few media reports and appears not to have gained significant traction.

This paper takes the work of the technorealists as its starting point and does the work that Kellner (2021:9) suggests was lacking, that is, to take "an adequate standpoint of critique." This paper advances technorealism to a technocritical approach which expressly states that the 'social, political, and economic leanings' are this way because of the way that power plays out in these areas and in the way that technology comes to influence and inform the social, political, and economic, in particular in the Global South. It is not enough to consider the biases, rather they must be interrogated in order to understand how they are informed by the social, political, and economic (see, for instance, the work of Safiya Noble 2018 in Algorithms of Oppression). In discussing matters of technology and human agency and power, critical theory is an enabling body of work to draw upon.

Towards a technocritical approach

In the matter of the debates regarding AI, critical theory is integral in pushing the work of technorealism towards a technocritical perspective. Critical theory, broadly, holds that society is structured by a complex set of relations and rules which are partially hidden or obscured. It is the work of critical theory to reveal and interrogate these relations and rules (Strydom 2011: 10). Core to the work of critical theory is the emphasis on the complexity of social relations (Tyson 1999), and that to take a simple approach to that which is complex and steeped in power relations is problematically reductionist and at risk of perpetuating current power imbalances (Tyson 1999: 2-3). This is inclusive of technology where conversations and debates are reduced to technological pessimism or technological optimism all while negating the complexity of the integration of technology into the lives of individuals, communities, industries, and society (Kellner 2021: 9-10).

Just as Strydom (2011) and Tyson (1999) have indicated that society is infused with power, complex relations and structures, Grimes and Feenberg (2013) and Kellner (2021) indicate that this is also reflected in technology. Grimes and Feenberg (2013: 121) take a clear position on this matter by stating that

> "...technologies are not separate from society but are adapted to their social and political environment. Since technologies are implicated in the socio-

> political order they serve and contribute to shaping, they cannot be characterized as either neutral or as embodying a singular 'essence.'"

Technologies are informed by the social relations and context of technology's production, adoption, and use. Thus, technology is not neutral and so sites of production, such as the Global North, come to inform how technologies, such as AI, are designed, their uptake and use, and the nature of the content generated by such technologies (Kellner 2021: 11; Lindgren 2023). This results in a power imbalance and an overt dominance over the Global South. This is only one example of how "technologies are deeply political" and are in need of a critical reading and engagement (Grimes and Feenberg 2013: 123).

A technocritical lens in the reading, understanding and engagement of technology can make power imbalances, and other factors, explicit. It is through this understanding of technology as political, including AI, as imbued with power, that technology comes to be seen as no longer neutral (Lindgren 2023). But it is not enough to simply state that technologies are not neutral, instead they must be understood to be "terrains of struggle" (Grimes and Feenberg 2013: 129. In revealing them to be such, they are no longer seen to be "fixed and finished things, they are dereified and exposed to criticism and opened to transformation" (Grimes and Feenberg 2013: 129). What is of particular interest to this paper are the 'terrains of struggle' regarding AI adoption by HEIs in the Global South and the pedagogical implications thereof for students using Global North technologies that do not account for their Global South lived experiences.

This paper adopts such a position, naming it a technocritical approach, and applies this perspective to AI, arguing that AI is not simply a neutral tool but that which is a 'terrain of struggle' and is deeply political (Grimes and Feenberg 2013). AI requires "dynamic and robust *foresight* tactics and methodologies grounded in the critical sciences to better identify limitations of a given technology and their prospective ethical and social harms" (Mohamed et al 2020: 662). As Lindgren (2023: 33) has presented, AI cannot be seen to be "only a technological phenomenon" because "it is co-produced at the intersection of the social and the technical." It is because of this co-production that "critical theory is vital for analysing AI due to its focus on society, political economy, ideology, and relations of power" (Lindgren 2023: 33). Technology,

such as AI, alone ought not to be viewed as the sole driver of technological disruption. It is through the uptake by human actors that technology may come to dominate a moment in history, such as is seen in this particular technological supercycle.

This paper thus defines a technocritical approach as one that recognises technology, such as AI, is not neutral but is deeply embedded with power and biases shaped by social, political, and economic structures. This includes the influence of geographical and epistemological power dynamics. A technocritical approach challenges the notion of technology as an autonomous force, emphasising that human actors influence and shape its design, its use, and its implementation. This approach advocates for participatory and context-sensitive technological adoption, guided by key principles discussed below.

Principles of a technocritical approach:

A technocritical approach is informed by the following principles: participatory and collaborative engagement; critical engagement; proactive real-world application; reflexive dialogue; and ethics of care. These principles are discussed briefly below:

Principle 1: Participatory and collaborative engagement: A technocritical approach addresses AI-related power imbalances by advocating for participatory and collaborative engagement through the inclusion of multiple stakeholders and voices. It challenges Big Tech dominance by promoting the development of technological solutions with, rather than for, the Global South. In higher education, this approach ensures that technologies are co-developed with a focus on the diverse lived experiences of students, accounting for the nuanced challenges that may impact their adoption and use of AI.

Principle 2: Critical engagement: The principle of critical engagement, rooted in critical theory, confronts power dynamics and challenges head-on, viewing discomfort and difficult questions as catalysts for productive dialogue. Rather than merely critiquing technology, it emphasizes the need for solutions with real-world applications. In higher education, this means assessing how AI tools developed in the Global North might affect students in the Global South. The approach involves

identifying concerns and collaboratively developing responsive solutions, ensuring student participation and relevance to their learning experiences.

Principle 3: Proactive real-world application: Building on the previous principle, productive engagement emphasizes the proactive application of solutions in real-world contexts. It is not enough to conceptualize or debate a solution; it must be designed to move from theory to practice. This approach anticipates future challenges and addresses them through practical implementation. In higher education, the need for actionable solutions is clear. For example, AI tools must be tested in the actual learning environment and adapted to address concerns or errors identified during the pilot phase before full classroom implementation.

Principle 4: Reflexive dialogue: Reflexive dialogue encourages individuals to critically examine their positionality, power, and privileges in conversations (Hundle et al., 2019; McLean, 2022). This process involves engaging with one's own perspectives, assumptions, and biases that surface during discussions. Reflexive dialogue fosters deeper understanding and more productive collaboration. In higher education, this might involve educators reflecting on their views about AI's benefits or risks in the classroom, questioning how these perspectives influence their teaching practices and affect student learning outcomes.

Principle 5: Ethics of care: The principle underpinning the entire technocritical approach is that of ethics of care, which should be integral throughout. This principle ought to be present throughout a process. While building on traditional ethics, ethics of care emphasises responsibility, well-being, and consideration for others, particularly vulnerable groups such as young people in higher education and asks that their needs are accounted for (Preissle, 2007; Edwards & Mauthner, 2012). For instance, in AI adoption within Global South HEIs, ethics of care would assess unintended consequences on student learning, considering how AI tools might impact or influence their educational experiences.

The abovementioned principles can be approached as a cycle of enquiry and action as demonstrated in the case study discussed further below.

AI as a product of the Global North, and the implications for HE in the Global South

Well before the proliferation of AI tools in 2022, significant dialogues evolved around the position of the Global South in the global digital turn in HE (Prinsloo 2020; MacDonald & Riaz 2019; Bozalek & Zembylas 2016). The recent introduction of generative AI and the rapid user penetration of these tools - the so-called AI Renaissance - is widely deemed particularly significant in the HE landscape, more so than preceding forms of disruptive learning technologies (Bozkurt & Sharma 2024). Therefore, the implications for the Global South should be critically interrogated.

AI is trained on vast amounts of existing and historical online data, which is overwhelmingly dominated by content generated by Internet users in the Global North, given the much higher Internet penetration in these countries. The majority of AI LLMs are further developed by Western companies (Franki et al. 2023). Their capabilities have been primarily developed for English-language generation, with iterative expansion to other languages (Manire et al. 2023). Consequently, these GenAI tools are trained on Western-generated, predominantly English content. When GenAI is used to generate information relating to non-Western cultures, the use of English often indicates representational harms such as cultural misappropriation and notions of exoticism (Gosh et al., 2024).

This apparent Western-dominated bias of GenAI with text, images, and other forms of media overwhelmingly representing Western perspectives and contexts is well-documented (Zhu et al. 2024; Mandal et al. 2021; Hall & Ellis 2023). AI chatbots are trained to 'scrape' and learn from the available data, simulating what would be deemed an acceptable response to a prompt (Roselli et al. 2019; Liang et al. 2022). The notion of what is deemed 'acceptable' is also informed by the data it is fed, dominated by Global North, English-speaking countries, and those with the influence and power dominate representation online. Such a notion of ‘acceptability’ has ethical implications and consequences for those who come to adopt and use AI tools, for instance.

A technocritical stance would acknowledge, but not exclusively subscribe to, either overtly techno-pessimist or -optimist perspectives on the implications of these (current), 'Western-dominant' algorithmic models of AI. On the one hand, it should be

considered that "the ‘invasion’ of AI may echo colonialism by neglecting local interests and disadvantaging minority groups” (Okolo et al., 2023: vi). On the other hand, it cannot be denied that AI systems, including but not limited to the LLM model—despite their many limitations—can accelerate access to global advances in various fields, Global North -generated knowledge, communication and translation tools that will aid Global NorthGlobal South collaboration, and other much-needed capabilities for Global South contexts. It is thus necessary that regulatory frameworks are developed by Global South countries to account for their contexts to “protect citizens from the technology’s misuse” (Tsanni 2024).

It is futile to adopt a decidedly techno-optimist or -pessimist stance in these speculative debates because AI is notoriously unexplainable and uninterpretable (Wachter, 2021; Rudin and Radin, 2019). AI is especially resistant to predictive models that confirm or deny hopes and concerns for its impact on higher education in the Global South . Allenby and Sarewitz (2011) argue that when techno-human engagement reaches such levels of hyper-complexity—where the use of technology is evolving rapidly and on such a grand scale—it can be approached as a hyper-complex system. Such systems can no longer be accurately described nor controlled, and any attempt at forecasting their evolution becomes a fruitless exercise. They argue, though, that this elevated level of uncertainty does not negate the value of engaging in dialogue to clarify what is known about the system and which beliefs and values are most likely shaping the system’s volatile behaviour (Allenby & Sarewitz 2011).

What is known about AI is that it has cemented the gradual repositioning of learning as a form of human-machine collaboration. It challenges, much more explicitly than any prior digital technology, the long-held epistemological foundations of HE. It brings to the fore questions of what and how humans learn, given the undeniable role that generative AI will play in the generation of content.

These worthy questions can generate a sense of paralysis. There is a shared commitment in the Global South HE sector for local curricula to retain a rootedness in local knowledge, with an associated focus on finding fit-for-purpose solutions to real-world, local problems (Webb & Sepúlveda 2020). HE campuses in the Global South have increasingly demonstrated a commitment to fostering students’ native cultural identities, equipping them to represent local interests in an increasingly globalised

world (Patton 2023). Yet, there is no doubt that these graduates will be best equipped for the lifelong learning that their dynamic future careers will demand if they can harness the seemingly infinite capabilities of AI technologies, despite these tools representing the views, contexts, and vested interests of their Global North creators.

From a technocritical standpoint, the uncertainty around the impact of AI on the Global South HE project should not lead to a rejection or delayed adoption of AI usage. Instead, it should spur a sense of urgency to move from the passive acceptance of AI as an integral part of the future of the Global South to proactive exploration of these tools in the HE sector. It is possible, from a technocritical perspective, to acknowledge the opaque nature of these systems while piloting their potential use in a transparent and thoughtful way. This would involve the Global South leveraging AI, adapting it, or – even better - creating their own solutions, while not shying away from asking the challenging questions around who and what is empowered and benefits from AI.

AI and the pedagogical: A case study

This paper now turns to the task of exploring how a technocritical stance would manifest in the Global South teaching-learning context. Firstly, it would acknowledge the (global) optimistic perspectives on AI usage in HE. Much has been proclaimed about its apparent ability to support learning. Among the many reported affordances of Generative AI (GenAI) include its ability to provide students with efficient access to foundational information (Sousa, 2021) and to act as interactive feedback and editing tool (Nzoka, 2024). However, students need reliable and fair access to these tools for all to benefit equally (Bartoletti, 2022). In the Global South, where the digital divide is already a concern, AI can potentially exacerbate issues associated with varying levels of access to reliable Wi-Fi connectivity, personal smart devices, and financial resources for paid subscriptions to premium tools (Li, 2023).

A less obvious but crucial risk of GenAI usage is its potential to dampen the dialogic and critical thinking processes that are essential components of tertiary education. It has been shown that students are increasingly tempted to quickly 'outsource' tasks to GenAI tools designed to promote critical engagement with challenging learning material (Abbas, 2024). By habitually relying on the speed and efficiency of AI-generated outputs instead of engaging with material or their peers, students miss the

opportunity to grapple with the nuanced and context-specific nature of complex problems (Darwin et al., 2024). This has implications for their critical thinking and other higher order skills development.

There is a generative tension then in the Global South context: AI can effectively support students in many of their educational activities, but it can also pose a threat to some of the components of a rich learning experience. For instance, GenAI tools that reflect the dominant and the global, as opposed to the under-represented and the local, will remain lacking in the GS context. This is of critical concern in contexts, such as South Africa, that have made significant advances in decolonising the curriculum since 2015 (Laakso and Hallberg, 2024; Govender and Naidoo, 2023). The uncritical adoption of Global North technologies places Global South contexts at risk of digital colonisation.

A technocritical perspective actively brings these considerations to the forefront while exploring the practical use of GenAI in the classroom. It raises questions that can be broadly grouped in four sites of tension: 1) Discomfort versus ease-of-access/easy responses; 2) Plurality of input and productive friction vs user-responsive/superficial input; 3) Diverse modes of learning vs singular mode of learning/learning through acquisition; 4) Critical and sensitised knowledge/content know-how vs uncritical knowledge/content consumption.

Drawing on the tenets of a technocritical perspective, simply posing these questions is insufficient. It should lead to pragmatic exploration of alternative options.

Case study: An example from a Global South private higher education institution

Eduvos, a private higher education institution (HEI) in South Africa had – like other HEIs - been grappling with the challenge of how to respond to the profound disruption of AI, since 2022. By 2024, an AI committee was established, tasked with clarifying and socialising the institutions' position on AI. The committee was further required to

provide students and staff with extensive, practical guidelines on the responsible use of AI in teaching and learning contexts.

An AI webinar series was presented to staff, and a virtual chat group created where follow-up questions and concerns could be raised. There, lecturers reflected on their concerns about many students' suspected misuses of GenAI, e.g., to outsource their writing and coding assignments to ChatGPT. They expressed their uncertainty around the impact of AI on the learning process. The authors of this article served on the institution's AI committee, and were actively involved in these virtual discussions, the presentation of webinars, and consultations with lecturers on AI usage at the institution. These concerns were heightened during a unique period when a technical disruption to the institution's learner management system led to the decision to conduct a portion of assessments as open-book, or 'take-home' assessments. A total of 1642 assessments were attempted in this format, for 87 modules across various disciplines, including Commerce, Law, Humanities and IT. Following a reflexive thematic analysis of the key concerns raised by academic staff during this period, key questions, presented below, were identified as expressing the most pertinent queries posed by their colleagues.

Adopting a technocritical perspective, each of these key questions points to areas of productive tension. Engaging with these tensions demanded continuous intellectual effort, which both informed and was informed by practical actions. These actions were not intended as solutions but rather as opportunities to gain new insights into the original questions. Throughout this iterative and ongoing process, careful consideration was given to who is being served and why—thereby grounding the entire approach in an ethic of care.

Example 1: Concerns about the complexity and diverse modes of learning.

Staff raised important questions, demonstrating their commitment to ensuring that assessments remained challenging, even though students would have access to GenAI tools that could automate many learning processes typically requiring independent effort. For example, they asked:

How can we help students navigate the discomfort of engaging with diverse information sources over time, even when AI offers quick, generalised answers?

How do we design a curriculum that integrates practical application, collaboration, and varied learning methods to foster local solutions?

And can we prevent GenAI, primarily a tool for learning-through-acquisition, from becoming the dominant way students complete tasks?

In response to these valid concerns, tasks that could be outsourced to AI were collaboratively re-designed by content development teams. Academics were guided to incorporate primary sources such as current news articles, embodied actions like conducting interviews, and critical reflections on the learning process. Other tasks required students to demonstrate practical troubleshooting, such as coding through screencasts. Post-assessment discussions explored how sustained, practical tasks might differ if AI were involved. This led to ethical reflections—addressed during the assessment debrief—on the care-based approach adopted by content teams:

Who benefits from intentionally designing assessments where AI cannot be used?

And how does this time-intensive model impact lecturers?

Example 2: Critical questions around AI usage in the Global South.

During the assessment design process, academic staff expressed concerns about balancing the institution's commitment to a local identity with maintaining international standards. They asked:

How can we help local students use dominant GenAI tools in take-home assessments while appreciating the critical insights these tools often lack?

How do we prepare them to distinguish between GenAI outputs that are relevant for local use and those that promote problematic or inaccurate views in the Global South?

These questions highlight the tension between acquiring deep contextual knowledge and the convenience of immediate, generalised information, as well as between valuing the local and understanding the global.

To address these issues, content developers worked with lecturers to examine the data sources used by GenAI tools. In some modules, it became clear that standard GenAI chatbots struggled to provide appropriate responses. As a result, assessments were redesigned to highlight these gaps. In South African Law, students were tasked with tackling complex local scenarios, verifying AI-generated responses against local case law. In Commerce, students were actively encouraged to use AI to generate synthesised summaries of key concepts, but then to identify tensions with micro-trends in their own communities. In Humanities, students had to review repositories of a local cartoonist's work, to substantiate their arguments around e.g. satire, and its application in current news. contemplate themes such as satire in the This raised ethical questions during the debrief:

> *Does contrasting GenAI outputs with local data help students learn to identify deficiencies and appreciate AI's value?*
>
> *And how can academics, who must constantly assess these evolving tools, be better supported?*

Critical questions around AI usage did not demand clear or immediate answers. However, by combining intellectual effort with imperfect yet pragmatic and collaborative actions, new possibilities emerged. Through these questions and the opportunities, they generated, lecturers, students, and academic content writers deepened their understanding of AI-human collaborative learning, while staying focused on the core values of the academic project.

The examples above illustrate that by actively experimenting with AI tools, new avenues for using AI as supportive tools in curriculum design can be created. However, each use case brings further complexity, with the risk of benefiting one stakeholder (e.g., a lecturer) while creating obstacles for another (e.g., a student). These imperfect outcomes present opportunities to forge new paths, each more closely aligned with the ethics of care. By embracing these ongoing trade-offs and corrective actions, all stakeholders engage in a continuous learning cycle, rather than being confined to a linear approach where perfect outcomes are expected.

This technocritical approach allows HE stakeholders in the Global South to, as Allenby and Sarewitz (2011) suggest, 'muddle through' the complexities of the current technosocial context. The approach embraces the in-between space of not being overly optimistic or pessimistic about AI but rather critical, curious, and engaging. It accounted for human-technology relations and the understanding that in order to support students and lecturers and content writers, a critical engaged approach was necessary.

Conclusion and recommendations

As AI continues to shape the educational landscape, particularly in the Global South, it is imperative that HE institutions approach its integration with a technocritical perspective. This approach involves actively exploring the potential benefits of AI, while also embracing the intellectual labour and critical dialogue regarding the risk of AI. The case study of Eduvos, a private higher education institution in South Africa, underscores the complex dynamics at play when AI is introduced into the teaching-learning context. It reveals the necessity of balancing the convenience and efficiency of AI tools with the pedagogical goal of fostering deeper, more localised learning experiences for learners.

A technocritical approach allows educational institutions, among others, to navigate the complexities of AI adoption thoughtfully and ethically. By engaging in a continuous cycle of questioning, experimenting, and reflecting, stakeholders can better understand the nuanced implications of AI in the classroom. This ongoing process is not about achieving perfect outcomes but about learning and adapting in ways that align with the core educational values informing the academic project.

In embracing these complexities, HE institutions in the Global South can provide thought leadership on how AI can serve as a tool for empowerment rather than a vehicle for digital colonisation. Through this approach, we can create educational environments that are not only technologically advanced but also deeply rooted in the principles of care and critical engagement. By 'muddling through' the challenges and opportunities presented by AI, new paths that are more closely aligned with the needs and aspirations of diverse educational communities can be forged. Before closing, this

paper makes three recommendations for HEIs as they ‘muddle through’ the challenges and opportunities that AI presents.

Recommendations

Adopting a technocritical perspective: Global South institutions should integrate AI into their curricula through a technocritical lens. This involves continually and critically questioning AI's impact on educational practices, whilst collaboratively exploring ways that these technologies can be used to serve the diverse needs of all stakeholders, within their local contexts. Any institutional strategies, policies, or deliberate set of guidelines on AI usage should be tailored to the specific challenges and opportunities within the Global South

Fostering dialogic and critical thinking that will serve graduates in an AI-augmented world: Curriculum designers should prioritise activities that promote critical thinking and dialogic learning, especially in the presence of AI tools. Educators should be encouraged and supported in creating assessments that challenge students to engage deeply with the material, rather than simply outsourcing tasks to AI. When AI usage is encouraged as part of the learning process, AI should be positioned as a tool to support, and not replace, the complex process of seeking fit-for-purpose solutions to real-world problems.

Supporting educators to embrace an iterative and reflective approach to AI integration: In line with the ethics of care that inform a technocritical stance, institutions must also provide ongoing support to educators, helping them navigate the complexities of AI integration. This includes training, platforms for collaborative reflection, and resources to critically assess the impact of AI on student learning. Engaging all stakeholders—students, lecturers, and content developers—in this iterative process will be crucial in ensuring that the use of AI tools serves the educational community effectively.

In cultivating a culture of continuous learning, rooted in both critical dialogue and participatory action, pedagogical strategies are enabled to evolve alongside AI and its capabilities. In the Global South, these strategies must also account for the implications of technologies originating in the Global North, and the risk of subsequent digital colonisation. This approach may safeguard against such risks while ensuring

that the realities and perspectives of the Global South are accurately represented in the epistemological landscape.

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