

Epistemic Agency, Critical Consciousness, and AI in the Neoliberal University

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Abstract

Artificial intelligence (AI) is rapidly reshaping teaching, learning, and knowledge production in higher education. However, limited attention has been given to justice-oriented frameworks that connect AI-mediated education with epistemic agency and critical consciousness, particularly within market-driven university contexts. This conceptual article explores how teaching can be reimagined to cultivate epistemic agency and critical consciousness in AI-mediated higher education through a justice-oriented pedagogical framework. The article draws on frameworks such as critical pedagogy, decolonial theory, and epistemic justice to foreground the findings of this research. It employs a narrative-integrative review methodology to synthesise contemporary scholarship on AI and social justice in higher education. The article argues for a shift beyond transmissive and instrumental models of learning towards relational pedagogies that position learners as active co-creators of knowledge. It examines how AI technologies may reinforce or disrupt epistemic hierarchies through algorithmic bias, automated decision-making, and changing processes of knowledge production. The original contribution is a justice-oriented conceptual framework that integrates pedagogical design, institutional cultures, power relations, and technological systems for a better education experience. It recommends embedding critical AI literacy across curricula and aligning pedagogy with principles of epistemic justice to support equitable and socially transformative higher education in an increasingly algorithmic world.

Keywords: epistemic agency; critical consciousness; artificial intelligence (AI); epistemic justice; critical AI literacy



Education as Change
Volume 30 | 2026 | #22078 | 22 pages



<https://doi.org/10.25159/1947-9417/22078>
ISSN 1947-9417 (Online)
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Introduction

Across contemporary education systems, there is a growing interest in developing learners who do more than absorb information. Education is increasingly expected to enable students to question, construct, and apply knowledge in ways that contribute to socially just outcomes. Research shows that learners engage more deeply when they are positioned as active participants in knowledge construction, which is central to epistemic agency (Nieminen and Ketonen 2024). Despite this recognition, dominant assessment regimes and institutional norms continue to frame students as passive recipients of information, limiting their epistemic participation and credibility as knowers. In higher education in particular, narrow definitions of legitimate knowledge persist, marginalising diverse epistemologies and weakening students' epistemic legitimacy (Luckett and Blackie 2024).

Existing scholarship provides limited guidance on how critical pedagogy and critical artificial intelligence (AI) literacy can be integrated into AI-mediated educational environments. There is little evidence on how such an integration can foster epistemic agency and critical consciousness. Research also offers limited insight into how AI tools reshape epistemic authority and classroom power relations (Freire 1970; Luckett and Blackie 2024; Nieminen and Ketonen 2024). Emerging Freirean scholarship emphasises dialogue, care, and resistance to techno-rationalism in digital learning spaces (Pietersen 2024). However, it remains unclear how these principles can be applied in AI-enhanced classrooms. Research has yet to identify pedagogical designs that effectively support learner autonomy, critical judgement, and critical consciousness in AI-mediated learning. There is also limited understanding of how educators can address knowledge colonisation and changing forms of authority associated with AI technologies (Langeveldt and Pietersen 2024; Pietersen, Langeveldt, and Van Wyk 2023). This gap is especially pronounced in culturally diverse and historically unequal education systems, where dominant epistemologies frequently remain unchallenged and where questions of power, voice, and authority are most acute.

We view these dynamics as needing to be situated within the broader context of the neoliberal university. In such settings, market-driven logics of efficiency, competition, performativity, and scalability increasingly shape pedagogical practices, assessment regimes, and decisions about technology adoption. AI is often introduced not primarily to deepen learning or advance epistemic justice. Instead, it is deployed to increase throughput, standardise evaluation, and manage institutional risk (Williamson et al. 2023). This context matters because it shapes how epistemic authority is distributed. It also influences whose knowledge is recognised as legitimate and which forms of learner and educator agency are institutionally supported or constrained.

Neoliberalism is central to understanding AI adoption in higher education because it provides the institutional rationale through which technological innovations are evaluated and implemented. Under neoliberal forms of governance, universities are increasingly expected to demonstrate efficiency, measurable performance,

competitiveness, and economic value (Giroux 2020). Within this context, AI technologies are frequently promoted as tools for enhancing productivity, streamlining assessment, optimising resource allocation, and scaling educational provision (Bartoletti 2022; Özer 2024). While these developments may offer practical benefits, they can also reinforce managerial forms of accountability that privilege standardisation, quantification, and data-driven decision-making over critical inquiry and epistemic diversity. As a result, AI adoption is not simply a technical or pedagogical matter but a reflection of broader institutional and political-economic priorities that shape whose knowledge is valued, how learning is evaluated, and where epistemic authority resides (Luckett and Blackie 2024; Lindebaum et al. 2025). Understanding these dynamics is essential for examining the implications of AI for epistemic agency, critical consciousness, and epistemic justice within contemporary higher education.

The rapid expansion of AI-supported learning environments intensifies these concerns. Generative AI tools can support inquiry and expand access to information, yet they also risk automating key aspects of learning and epistemic judgement. Reliance on algorithmic outputs may weaken learners' independence, accountability, and confidence in their own reasoning (Lindebaum et al. 2025). At the same time, epistemic injustice continues to shape educational experiences when power determines whose knowledge is trusted and whose voices are heard (Catala 2025). AI systems further influence epistemic agency through embedded standards of justification (Chrisman 2022) and by shaping the affective and experiential dimensions of learning (Yang and Markauskaite 2023). Pedagogical design plays a critical mediating role, as teachers' epistemic beliefs, well-being, and institutional conditions influence whether AI supports or undermines learner agency (Lammasaari et al. 2022; Lin and Puntambekar 2025).

Despite these developments, little empirical or conceptual work has examined how AI reshapes classroom power relations, how students negotiate epistemic authority in AI-mediated contexts, or how educators can support inquiry without undermining learner autonomy or critical consciousness (Popow 2026). Research remains especially limited on how epistemic injustice operates within AI-driven pedagogies, particularly for marginalised learners and non-Western epistemologies. Reimagined pedagogical practices are essential for cultivating epistemic agency and critical consciousness (Pietersen, Langeveldt, and Van Wyk 2023). However, pedagogy alone cannot resolve epistemic injustices that are structurally produced through institutional arrangements, assessment regimes, and technological systems shaping whose knowledge is recognised and valued in higher education.

In response to the above gap, this article introduces a justice-oriented conceptual framework that integrates epistemic agency, critical consciousness, and critical AI literacy within relational and dialogical pedagogies. Drawing on critical pedagogy, decolonial theory, and epistemic justice, the article articulates key pedagogical principles and proposes a model linking pedagogical design, institutional cultures,

power relations, and technological systems to support more just and inclusive educational futures.

Problem Statement

Artificial intelligence is increasingly promoted as a solution to persistent challenges in education, often emphasising efficiency, personalisation, and scalability. While AI technologies can support access to information and instructional processes, their integration also introduces significant epistemic and ethical risks. Algorithmic bias, automated decision-making, and opaque forms of knowledge production can reshape how credibility, authority, and justification operate in classrooms (Bartoletti 2022; Lindebaum et al. 2025). These dynamics position AI not as a neutral tool but as a sociotechnical system that influences whose knowledge is valued, how learning is judged, and where epistemic authority resides (Catala 2025; Chrisman 2022).

In AI-mediated learning environments, these shifts raise pressing concerns for epistemic agency and critical consciousness. Reliance on algorithmic outputs may weaken learners' independence, judgement, and sense of responsibility as knowers, while reinforcing dominant epistemologies embedded in technological systems (Luckett and Blackie 2024; Yang and Markauskaite 2023). Pedagogical design plays a critical mediating role in this process, as teachers' epistemic beliefs, professional conditions, and institutional cultures shape whether AI supports inquiry or displaces human judgement (Lammassaari et al. 2022; Lin and Puntambekar 2025). Yet much of the existing literature prioritises technical implementation or governance, offering limited engagement with these deeper epistemic consequences.

The core problem is the lack of justice-oriented pedagogical frameworks that explain how critical pedagogy and critical AI literacy can be integrated to foster epistemic agency and critical consciousness in AI-mediated educational environments. Such frameworks are also needed to show how this integration can reshape epistemic authority and classroom power relations while sustaining learner autonomy and judgement.

Without such frameworks, AI risks reinforcing epistemic injustice and hierarchical knowledge structures rather than supporting education's emancipatory aims. Addressing this gap is essential for reimagining teaching in ways that align technological innovation with ethical responsibility, epistemic justice, and social transformation. Importantly, epistemic injustice in AI-mediated education should not be understood as an incidental or individual-level failure. Rather, it is structurally produced through institutional arrangements, assessment regimes, and technological systems that systematically privilege certain forms of language, reasoning, and knowledge while marginalising others. To address this challenge, this article proposes a justice-oriented conceptual framework that integrates epistemic agency, critical consciousness, and critical AI literacy within relational and dialogical pedagogies. By linking pedagogical practice with institutional cultures, power relations, and technological systems, the

framework offers a conceptual response to the identified gap and provides a foundation for reimagining AI-mediated higher education in ways that support learner autonomy, epistemic justice, and socially transformative educational futures.

Theoretical Framework

This article draws on critical pedagogy, decolonial theory, and epistemic justice to examine how teaching and learning are reshaped in AI-mediated educational contexts. Together, these perspectives challenge the idea of education as neutral information delivery and instead frame it as a space shaped by power, ethics, and struggles over knowledge. They help reveal how AI systems influence participation, redistribute epistemic authority, and shape whose knowledge is considered legitimate in classrooms.

Critical pedagogy understands education as a dialogical and relational process grounded in inquiry and shared meaning-making. It rejects “banking” models that position learners as passive recipients of fixed knowledge, emphasising learners’ active role in questioning and producing knowledge (Freire 1970; hooks 1994). This orientation is especially important in AI-mediated environments, where generative systems can produce confident-sounding outputs that invite uncritical acceptance. From a critical pedagogy perspective, sustaining epistemic agency requires teaching practices that support questioning, evaluation, and justification, rather than deferring authority to algorithms.

Decolonial theory deepens this analysis by foregrounding how historical and structural power relations shape what counts as legitimate knowledge. Many AI systems privilege dominant languages and epistemologies rooted in Eurocentric and Global North traditions (Mignolo 2007; Quijano 2000; Smith 1999). As a result, AI can marginalise indigenous, local, and relational ways of knowing. A decolonial approach calls for interrogating whose knowledge informs AI systems, recognising multiple epistemologies, and resisting the tendency to treat algorithmically produced knowledge as universal or neutral (Langeveldt and Pietersen 2024).

Epistemic justice further highlights how learners can be harmed in their role as knowers. Testimonial injustice occurs when credibility is undermined by prejudice, while hermeneutical injustice arises when learners lack the concepts needed to make sense of their experiences (Fricker 2007; Medina 2013). In AI-mediated education, these harms may be intensified by automated systems that privilege standardised language and dominant norms of reasoning, potentially silencing some voices while elevating others (Kerfoot and Bello-Nonjengele 2023).

Read together, decolonial theory and epistemic justice reveal that contemporary knowledge hierarchies in higher education are sustained through neoliberal regimes of knowledge production. Within these regimes, dominant epistemologies are prioritised for their standardisation, measurability, and market value, while alternative ways of

knowing are marginalised or rendered unintelligible (Langeveldt and Pietersen 2024; Ndofirepi and Pietersen 2025).

Drawing on critical pedagogy, decolonial theory, and epistemic justice, AI can be understood as a sociotechnical system that shapes epistemic authority, classroom power relations, and the conditions under which learners are recognised as credible knowers (hooks 1994; Langeveldt and Pietersen 2024). Within this framework, critical pedagogy and critical AI literacy are mutually reinforcing. Critical pedagogy provides the normative and pedagogical foundation by emphasising dialogue, reflection, learner agency, and the questioning of power relations in knowledge production (Freire 1970; hooks 1994). Critical AI literacy extends these principles to AI-mediated contexts, enabling learners to critically examine how algorithmic systems shape knowledge, authority, credibility, and participation. Together, critical pedagogy and critical AI literacy support epistemic agency. They position students as active evaluators and co-constructors of knowledge rather than passive consumers of algorithmic outputs. They also cultivate critical consciousness by helping learners recognise and challenge structural and epistemic inequalities embedded within educational and technological systems. Their integration directly addresses the study's research questions. It shows how pedagogical design can sustain learner autonomy, critically interrogate shifts in epistemic authority, and resist forms of epistemic injustice in AI-mediated higher education environments. In this sense, AI in education functions not only as a pedagogical tool but also as a technology of institutional governance. It shapes practices of monitoring, evaluation, and decision-making. These practices may reproduce neoliberal imperatives of standardisation and efficiency, or they may support more democratic and emancipatory educational aims.

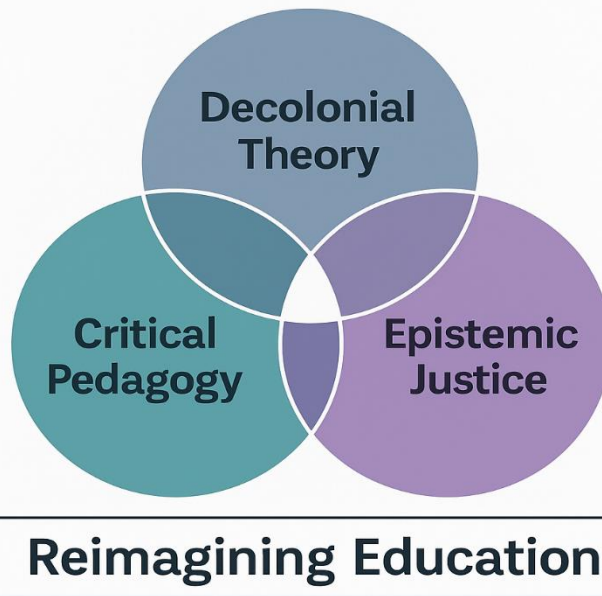


Figure 1: Theoretical framework

The figure illustrates the three theoretical perspectives that underpin the article's conceptual framework: critical pedagogy, decolonial theory, and epistemic justice. Their intersection provides the theoretical foundation for examining epistemic agency, critical consciousness, and the implications of AI-mediated learning in higher education.

Research Questions

As a conceptual and theory-building article, this study is guided by the following questions:

1. How can critical pedagogy and critical AI literacy be integrated within AI-mediated educational environments to foster learners' epistemic agency and critical consciousness?
2. How do AI-mediated educational systems reshape epistemic authority and power in higher education, and which pedagogical approaches can promote learner autonomy and resist epistemic injustice?

Methodology

This study uses a conceptual and interpretive approach to examine how teaching can be reimagined to support epistemic agency and critical consciousness in AI-mediated learning environments. Instead of collecting new data, it draws on existing research to

build new insights (Whittemore and Knafl 2005). The interpretive lens helps unpack how pedagogy, power, knowledge, and AI systems interact, focusing on meaning-making, dialogue, and learner agency. Empirical methods were not used because the study aims to develop a justice-oriented framework grounded in critical pedagogy, decolonial theory, and epistemic justice, rather than test variables.

A narrative-integrative literature review was conducted using peer-reviewed articles, books, and policy reports on epistemic agency, critical consciousness, and AI in education (Snyder 2019; Torraco 2005; Whittemore and Knafl 2005). Sources were drawn from Scopus, Web of Science, and Google Scholar, with attention to interdisciplinary work and Global South perspectives. The review focused on studies published between 2020 and 2026 to reflect recent developments in generative AI, while including key foundational texts where needed. Selection was based on relevance to higher education, justice-oriented pedagogy, and AI-related epistemic issues, while technical studies without pedagogical focus were excluded.

The analysis followed a thematic approach, focusing on three areas: epistemic agency, critical consciousness, and the impact of AI on knowledge, authority, and learner autonomy. These themes informed the development of an integrated framework linking pedagogy, power, and technology in AI-mediated education.

Findings and Discussion

This section is organised to directly address the study's research questions and systematically presents findings that respond to each research question outlined earlier.

Epistemic Agency in Contemporary Education

Recent scholarship identifies epistemic agency as a growing priority in contemporary education. Nieminen and Ketonen (2024) emphasise that students learn more deeply when they are positioned to question, construct, and apply knowledge for themselves. However, they note that many prevailing assessment practices continue to limit students' epistemic participation, casting learners as passive recipients rather than active contributors. Lockett and Blackie (2024) similarly argue that universities often uphold narrow and exclusionary definitions of legitimate knowledge, marginalising diverse epistemologies and weakening students' credibility as knowers. Collectively, these studies highlight a shared concern with how educational structures shape learners' opportunities to act as knowers and contributors to knowledge production. This body of scholarship highlights a close relationship between epistemic agency and critical consciousness. Learners must not only participate in knowledge-making but also understand and challenge the structural forces that determine whose knowledge is recognised, valued, and legitimised.

The expanding presence of digital technologies adds a further layer of complexity to epistemic agency. Lindebaum et al. (2025) argue that large language models are

reshaping epistemic agency and governance in higher education, warning that these tools may foster what they describe as “organized immaturity”. In this condition, learners increasingly offload cognitive and evaluative work to AI systems, weakening independence, judgement, and accountability. These concerns intersect directly with broader power relations. Catala (2025) notes that epistemic injustice intensifies when authority over knowledge validation is unevenly distributed. As AI systems mediate information access and legitimacy, the risks to epistemic agency become more pronounced, underscoring the need for pedagogies that promote critical AI literacy and ethical discernment.

Normative and affective dimensions also shape how learners exercise epistemic agency. Chrisman (2022) shows that individuals rely on shared standards of justification to evaluate beliefs, influencing how knowledge claims are formed and assessed. Research with student teachers demonstrates how engagement with inquiry and research practices can strengthen agency. Heikkilä et al. (2023) show that student teachers develop epistemic agency by learning to pose questions, justify claims, and assume responsibility for knowledge production. Complementing this, Yang and Markauskaite (2023) emphasise the emotional dimensions of epistemic development, illustrating how uncertainty, struggle, and reflection during practicum experiences contribute to agency formation. Together, these findings position critical consciousness as an ongoing practice of sense-making, reflection, and action.

Pedagogical and institutional conditions further shape the development of epistemic agency. Lin and Puntambekar (2025) stress the importance of epistemic scaffolding, arguing that learners require structured support to develop inquiry, reasoning, and collaborative knowledge-building capacities. Teacher practices play a decisive role here. Krist et al. (2023) demonstrate that teacher noticing, the ability to recognise and respond to students’ epistemic contributions, creates student opportunities-led sensemaking and autonomy. Professional contexts also matter. Pantić et al. (2022) show that teacher agency is deeply influenced by social and epistemic networks, while Lammasaari et al. (2022) highlight how teacher well-being and epistemic beliefs affect engagement and burnout. Coeckelbergh (2026) further observes that AI systems increasingly influence how people revise beliefs, raising questions about whether such technologies enhance or undermine autonomy.

Overall, the literature demonstrates that epistemic agency develops through a complex interplay of assessment practices, institutional norms, technological systems, emotional experiences, classroom interactions, professional networks, and broader socio-political structures. Promoting epistemic agency and critical consciousness requires systemic change, extending beyond individual classrooms to institutional arrangements (Ndofirepi et al. 2022). Such transformation depends on pedagogies that prepare learners to engage critically and ethically with AI while maintaining responsibility for knowledge production and social change.

Taken together, the literature suggests that epistemic agency is not an individual attribute acquired in isolation. Rather, it is a relational and context-dependent capacity shaped by pedagogical practices, institutional structures, technological systems, and broader social conditions. Across diverse studies, a consistent pattern emerges. Learners are more likely to develop agency when they are positioned as active participants in knowledge production. Inquiry-oriented pedagogies and opportunities for critical evaluation further support this development (Aboderin and Pietersen 2026).

At the same time, the growing influence of AI introduces new challenges to learner autonomy. AI reshapes how knowledge is accessed, validated, and trusted. These insights collectively support the framework proposed in this article. The framework positions epistemic agency as a central educational goal sustained through dialogue, critical reflection, and responsible engagement with AI-mediated knowledge environments.

Critical Consciousness and Social Change in Education

The contemporary literature on critical consciousness is deeply grounded in Freire's foundational work, particularly *Education for Critical Consciousness* (2005). Freire conceptualises education as a humanising and liberatory process through which learners develop the capacity to question oppression and transform their social conditions. Dialogue, agency, and collective action are central to this vision. While Freire's work has been critiqued for offering limited practical guidance, recent scholarship extends and adapts his ideas across diverse educational contexts, demonstrating the multidimensional nature of critical consciousness.

Many scholars apply Freirean principles to pressing global challenges. Yadav (2023) links critical consciousness to environmental sustainability, arguing that meaningful ecological action requires socio-political awareness rather than technical competence alone. Similarly, Djirong et al. (2024) examine student engagement with eco-friendly curricula in Indonesian higher education, identifying gaps between awareness and critical ecological participation. In global citizenship education, Kim and Yoo (2022) and Bosio and Waghid (2025) emphasise dialogue, ethics, and transformative action, while Stubbs and Hullinger (2022) highlight the role of moral reflection in fostering cultural transformation through critical pedagogy. Freire argues:

Integration with one's context ... is a distinctively human activity. It results from the capacity to adapt to reality plus the critical capacity to make choices and to transform that reality. (Freire 2005, 4)

Recent research further demonstrates that critical consciousness emerges within specific social and political conditions rather than automatically following reflection. Schwarzenenthal et al. (2022) show how classroom climate and experiences of Islamophobia shape students' socio-political awareness and action. Extending this perspective, Cadenas and McWhirter (2022) argue that critical consciousness is

essential for marginalised learners navigating unequal educational and career pathways. Empirical studies by Cadenas et al. (2022) and Maker Castro, Wray-Lake, and Cohen (2022) show that critical consciousness is associated with academic persistence, well-being, and agency across adolescence and young adulthood. Several studies also emphasise the cognitive dimension of critical consciousness. Rivas, Saiz, and Ossa (2022) demonstrate that metacognitive strategies, such as monitoring reasoning and evaluating evidence, play a central role in critical thinking development. These findings complement Freirean emphases on dialogue by highlighting the cognitive processes that underpin reflective judgement and socio-political engagement.

Critical consciousness is also shaped by cultural and linguistic context. Dorner et al. (2023) show how bilingual education disrupts monolingual epistemic norms and affirms learners' identities, while Zani et al. (2022) emphasise participatory, community-based approaches to cultivating collective agency. Craigie (2025) extends this work by demonstrating how community-engaged leadership in higher education deepens civic identity and socially responsible leadership. Emerging scholarship also addresses the relationship between critical consciousness and digital technologies. Dass and Pramod Kumar (2024) explore how educators integrate critical consciousness into digital citizenship education, emphasising ethical reflection in technology-rich environments. Alm and Watanabe (2023) argue that AI tools such as ChatGPT must be used dialogically rather than through "banking" pedagogies to support critical digital literacy.

Across this literature, scholars increasingly note that cultivating critical consciousness cannot be reduced to individual learning outcomes. Van Schalkwyk and Blitz (2024) argue that curriculum renewal and meaningful faculty development are necessary to sustain transformative educational practices. Without institutional commitment, efforts to promote critical consciousness risk becoming fragmented or superficial.

Taken together, this body of research affirms critical consciousness as essential for justice-oriented education while revealing persistent challenges. Definitions vary, long-term impacts remain underexplored, and attention to structural inequality is uneven. These gaps underscore the need for theoretically grounded and design-focused frameworks capable of navigating the epistemic and ethical complexities of AI-mediated education (Ndofirepi and Pietersen 2025).

Viewed collectively, this body of scholarship demonstrates that critical consciousness extends beyond awareness of social issues. It also includes reflective judgement, ethical engagement, and transformative action. Although studies differ in context and emphasis, they point to several common themes. Dialogue, participation, and critical reflection consistently emerge as important conditions for helping learners recognise and challenge structures of inequality. The literature further suggests that critical consciousness is shaped by institutional, cultural, and technological conditions. It does not emerge automatically through individual learning processes. These patterns reinforce the article's argument that fostering critical consciousness in AI-mediated

education requires pedagogical approaches that connect knowledge, power, and social responsibility (Aboderin and Pietersen 2026). Such approaches should also create opportunities for learners to question dominant assumptions and engage with diverse perspectives.

Influence of AI on Epistemic Authority, Classroom Power, and Learner Agency

Recent research consistently presents AI as a powerful force reshaping education, yet this influence extends well beyond efficiency or personalisation. While AI can support instructional design, assessment, and feedback, scholars emphasise a persistent tension between its potential benefits and its epistemic and ethical risks (Bartoletti 2022; Mindigulova, Vikhman, and Romm 2023; Özer 2024). Central to this tension is how AI systems reshape epistemic authority, redistribute classroom power, and influence learner agency.

At an epistemic level, AI tools increasingly function as authoritative sources of knowledge. Generative systems often produce fluent and confident responses that may be mistaken for accuracy, encouraging learners to treat AI as a “surrogate knower” rather than as a fallible support for inquiry (Jose et al. 2025). This shift can weaken attention to justification, evidence, and reasoning, as learners focus on outputs rather than on how knowledge is constructed. Lindebaum et al. (2025) describe this dynamic as contributing to “organized immaturity”, where responsibility for epistemic judgement is gradually transferred from learners to algorithmic systems. Such developments raise concerns about autonomy, accountability, and the erosion of learners’ confidence in their own epistemic capacities.

These epistemic shifts are closely linked to changes in classroom power relations. AI-driven personalisation, automated feedback, and algorithmic assessment alter the traditional roles of teachers and students. Teachers may increasingly act as facilitators or system managers, while AI systems exert greater influence over pacing, evaluation, and feedback (Yan, Suleman Abdullah Alwabel, and Mohamad 2025). Although these changes are often portrayed as innovations, they raise governance and accountability concerns, especially when algorithmic decision-making is opaque or difficult to challenge (Gasanova and Romanova 2024; Nartgün and Kennedy 2024). As Zeniakin (2023) notes, the pressure to adopt AI quickly can lead institutions to prioritise technological relevance over pedagogical deliberation, potentially deepening power asymmetries rather than challenging them.

Students’ experiences reflect this complexity. Empirical research shows that learners often appreciate AI for its convenience, responsiveness, and study support, yet express concern about overreliance, diminished critical thinking, privacy risks, and uncertainty surrounding authorship and academic integrity (Doğan, Çelik, and Arslan 2025; Pitts, Marcus, and Motamedi 2025). These ambivalent responses highlight a core paradox: AI can enhance access to learning while simultaneously undermining the independence and judgement education seeks to cultivate. When reliance on AI becomes normalised,

learners may disengage from inquiry, verification, and reflective sense-making (Al Maqbali and Tahir 2024).

Importantly, the influence of AI on epistemic authority is not neutral or evenly distributed. AI systems often privilege standardised language, dominant reasoning styles, and normative epistemic assumptions embedded in their training data and design (Matar 2024; Paaß and Hecker 2023). In educational contexts, this can marginalise learners whose ways of knowing, expression, or cultural knowledge do not align with these norms. In language education, for instance, AI may function as an “intelligent mediator”, supporting learning while simultaneously threatening identity and creating dependence on algorithmic feedback (Yang 2025). These dynamics illustrate how AI can amplify existing epistemic injustices by reinforcing narrow standards of credibility.

Design-oriented research suggests, however, that these outcomes are not inevitable. When AI is positioned as a partner in inquiry rather than an epistemic authority, learners are more likely to retain agency and responsibility for knowledge production (Woodruff and Hewitt 2026). Wu et al. (2025) argue for shared but clearly human-led epistemic agency, emphasising how learners’ understanding of AI’s limits and roles shapes whether engagement fosters dependence or critical judgement. Similarly, Woodruff and Hewitt (2026) propose treating large language models as knowledge-building partners that support inquiry without displacing human authority.

A decolonial perspective highlights that AI-mediated epistemic authority is shaped by historical and political power relations, often privileging Global North knowledge systems while marginalising diverse ways of knowing. Complementing critical pedagogy and epistemic justice, decolonial theory challenges entrenched knowledge hierarchies within curricula, institutions, and AI systems.

Taken together, this body of literature shows that AI reshapes epistemic authority and classroom power relations, with far-reaching implications for learner agency (Nieminen and Ketonen 2024). The central issue is not simply whether AI is used in education but how pedagogical design can preserve human judgement, sustain learner autonomy, and foster critical consciousness in AI-mediated environments. Addressing these challenges requires intentional pedagogical approaches that foreground justification, critique, and ethical engagement, ensuring that AI expands educational possibilities without undermining the human capacities at the heart of learning (Long and Magerko 2020; Miao and Holmes 2023).

Across the literature, AI emerges as neither a neutral educational tool nor an inherently transformative force. Its effects depend on how technological systems interact with pedagogical practices, institutional priorities, and existing power relations (Miao and Holmes 2023; UNESCO 2023). Although AI can support inquiry and knowledge-building, it may also encourage dependency, standardisation, and the reproduction of existing inequalities (Langeveldt and Pietersen 2024). These tensions support the

article's central contention that AI should be understood as a sociotechnical and ethical issue rather than merely a technical innovation.

The findings further reveal that epistemic agency, critical consciousness, and AI-mediated learning are interconnected through broader questions of power, participation, legitimacy, and justice (Kerfoot and Bello-Nonjengele 2023). The justice-oriented framework proposed in this article responds to these challenges by integrating critical pedagogy, decolonial theory, and epistemic justice to guide pedagogical and institutional responses to AI-mediated education (hooks 1994; Langeveldt and Pietersen 2024; Ndofirepi and Pietersen 2025). Its purpose is to promote meaningful engagement with AI while protecting learner autonomy and supporting equitable knowledge production in higher education.

Implications for Pedagogy and Curriculum

This section operationalises how justice-oriented conditions can support epistemic agency and critical consciousness in AI-mediated education (RQ1). It also addresses shifts in epistemic authority and classroom power relations (RQ2). Assessment is a central site where epistemic authority is allocated. In AI-rich contexts, practices that prioritise fluency or final outputs risk shifting judgement from learners to algorithmic systems. In line with the framework's emphasis on epistemic responsibility, assessment should foreground justification, reasoning, and reflective judgement. These approaches ensure that learners remain accountable as knowers when AI tools are used.

Curriculum design plays a complementary role in integrating critical pedagogy and critical AI literacy. AI should not be treated as a technical add-on, but curricula should examine how AI systems shape knowledge production, credibility, and disciplinary norms. As illustrated in Figure 1, this integration supports critical consciousness as an ethical and civic capacity. Pedagogical design mediates whether AI reinforces or disrupts epistemic hierarchies. Dialogical and relational practices position learners as co-constructors of knowledge. In these settings, AI functions as a resource for inquiry rather than an epistemic authority. Such practices preserve learner autonomy, judgement, and epistemic confidence (RQ1 and RQ2).

These principles can be enacted through curriculum and assessment design (Miao and Holmes 2023). Lecturers can ask students to generate AI-assisted responses to disciplinary problems and then critically evaluate the assumptions, omissions, biases, and limitations in those responses using scholarly literature (Fischer et al. 2024). Such assessment emphasises critical reasoning, evidence-based judgement, and epistemic responsibility rather than answer production alone (Nieminen and Ketonen 2024). Curriculum designers can also use case studies to examine how AI privileges particular forms of language, knowledge, and reasoning while marginalising others (Kerfoot and Bello-Nonjengele 2023; Langeveldt and Pietersen 2024). Through dialogue, reflection, and collaborative inquiry, students can explore credibility, authority, epistemic justice, and critical AI literacy (Kerfoot and Bello-Nonjengele 2023; Long and Magerko 2020).

These approaches position AI as a subject of critical examination and a learning resource without diminishing learners' agency, autonomy, or responsibility for knowledge creation (Miao and Holmes 2023; Nieminen and Ketonen 2024).

Finally, the framework highlights the limits of individual practice. Sustaining epistemic agency and critical consciousness requires institutional support (Nieminen and Ketonen 2024). Institutional cultures, policies, assessment regimes, and professional learning structures shape how epistemic authority and responsibility are distributed (UNESCO 2023). Aligning these conditions with justice-oriented aims is essential (Langeveldt and Pietersen 2024). Without such alignment, AI risks reproducing epistemic injustice rather than enabling the framework's enactment in practice (Langeveldt and Pietersen 2024) (Figure 1).

Conclusion

As AI becomes increasingly embedded in education, questions of epistemic agency, critical consciousness, and justice become unavoidable. This article has argued that AI reshapes epistemic authority and classroom power relations in ways that can either undermine or support education's emancipatory purposes. By integrating critical pedagogy, decolonial theory, and epistemic justice, the article offers a justice-oriented framework for reimagining teaching in AI-mediated contexts.

Reimagined pedagogies grounded in dialogue, reflexivity, and critical AI literacy can support learners in remaining active, responsible knowers rather than passive consumers of algorithmic outputs. Ultimately, fostering epistemic agency and critical consciousness in an AI-driven world is not merely a pedagogical challenge but a moral and political one, central to the pursuit of more just and inclusive educational futures.

Reimagining education for social change requires more than pedagogical innovation within existing systems. It demands critical engagement with the neoliberal institutional conditions under which AI is adopted and normalised in higher education. Without addressing how market-driven logics shape epistemic authority, assessment, and accountability, efforts to promote epistemic agency and critical consciousness risk being absorbed into the very structures that reproduce epistemic injustice.

Recommendations

Based on this study, the following recommendations are proposed:

Educational institutions should prioritise pedagogies that foreground epistemic agency, critical consciousness, and human judgement in AI-mediated learning environments (Freire 1970; Nieminen and Ketonen 2024). These pedagogies must ensure that learners remain active and responsible knowers, even when AI tools are used. Curricula should embed critical AI literacy across disciplines. This integration should emphasise

justification, ethical reflection, and responsible knowledge production rather than fluency alone (Bartoletti 2022; Wu et al. 2025).

Institutions should also provide sustained professional development. Such support should help educators navigate the epistemic and ethical implications of AI. It should also align assessment practices with justice-oriented educational aims (Lin and Puntambekar 2025; Van Schalkwyk and Blitz 2024). AI systems used in education should be treated as objects of critical inquiry rather than neutral instructional tools. This approach requires transparency, contestability, and ongoing evaluation of their epistemic effects (Fricker 2007; Jose et al. 2025). Pedagogical designs should intentionally preserve spaces for dialogue, collective sense-making, and reflective judgement. These practices help counteract overreliance on automated outputs (hooks 1994; Woodruff and Hewitt 2026).

Finally, institutions must recognise that fostering epistemic agency and critical consciousness in an AI-driven world is a collective and structural responsibility. It cannot be delegated solely to individual educators or learners (Catala 2025; Giroux 2020).

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