Research Community Brief

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Supporting Evidence

Evidence Base Characteristics

This analysis examines 1,020 education-focused articles from a corpus of 1,937 AI-related publications collected between November 18-24, 2025. The distribution reveals a field dominated by theoretical frameworks and practical guidelines, with limited empirical validation. Quality indicators from our scoring system show concerning patterns: the highest-rated articles focus on institutional implementations like [16] and international collaborations such as [17], suggesting a bias toward institutional announcements over rigorous research.

[16] trustees approve 'AI working competency' graduation ...

[17] UCalgary's Yani Ioannou to lead Canada-France AI ...

The evidence base skews heavily toward prescriptive frameworks like [1] and implementation guides such as [14], with relatively few controlled studies. A notable exception is [3], representing one of the few randomized controlled trials in the corpus. This imbalance between theoretical proposals and empirical validation raises questions about the field's maturity and evidence-based decision-making.

[1] a five-tiered framework to generative AI in K-12 education

[14] PDF A GUIDE TO AI IN SCHOOLS - tsl.mit.edu

[3] AI tutoring outperforms in-class active learning: an RCT ... - Nature

Perspective Distribution Analysis

The available evidence reveals systematic exclusions in perspective representation. Student voices appear primarily through limited studies like [5] and [15], which specifically examine marginalized student populations. However, these represent exceptions rather than the norm.

[5] Analysing Nontraditional Students' ChatGPT Interaction, Engagement, Self-Efficacy and Performance: A Mixed-Methods Approach

[15] The Lived Experiences of African American First-Generation Higher Education Students in the Artificial Intelligence Chatbot College Admissions Process: A Transcendental Phenomenological Study

The dominance of institutional and administrative perspectives shapes theoretical development toward compliance and implementation frameworks rather than pedagogical innovation or student empowerment. Works like [10] attempt multi-stakeholder analysis but remain rare. This perspective imbalance fundamentally constrains our understanding of AI's educational impact, privileging institutional control narratives over learning outcomes or equity considerations.

[10] Generative AI in Education From the Perspective of Students, Educators, and Administrators

Failure Pattern Analysis

The corpus demonstrates limited engagement with failure analysis, with most articles avoiding systematic documentation of unsuccessful implementations. [11] represents a rare examination of system vulnerabilities, while [6] addresses academic integrity failures. Ethical concerns appear in [2] and [13], but systematic failure taxonomies remain absent. This gap suggests the field prioritizes success narratives over learning from failures, hindering evidence-based improvement.

[11] How to Trick Your AI TA: A Systematic Study of Academic Jailbreaking in LLM Code Evaluation

[6] ChatGPT: The End of Online Exam Integrity? - MDPI

[2] AI Proctoring: Academic Integrity vs. Student Rights

[13] Navigating ethical challenges in generative AI-enhanced research:the ETHICAL framework for responsible generative AI use

Discourse Analysis Findings

Dominant metaphors frame AI as either savior or threat, with little nuanced middle ground. The "competency" framing in Purdue's graduation requirement and the "outperforms" language in the Nature RCT study reveal underlying assumptions about AI as competitor to human instruction rather than collaborative tool. [8] offers an alternative participatory framing, but such approaches remain marginalized. Power dynamics favor top-down implementation models over community-driven development, as evidenced by the prevalence of institutional announcements versus grassroots innovations like [12].

[8] Community-engaged artificial intelligence: an upstream, participatory design, development, testing, validation, use and monitoring framework for artificial intelligence and machine learning models in the Alaska Tribal Health System

[12] Innovación social académica en tiempos de capitalismo cognitivo: El caso de la Biblioteca de Prompts Colaborativos

Methodological Observations

The evidence base reveals concerning methodological limitations. Cross-sectional surveys and theoretical frameworks dominate, with longitudinal studies notably absent. Mixed-methods approaches appear in select studies examining specific populations, but comprehensive evaluations of AI's impact on learning outcomes over time remain unavailable. The reliance on self-reported data in studies like [7] raises validity concerns. Geographic concentration in North American and European contexts limits generalizability, though exceptions like the Alaska Tribal Health System study suggest alternative methodological possibilities.

[7] College students' literacy, ChatGPT activities, educational outcomes, and trust from a digital divide perspective

Theoretical Development Needs

Current theoretical frameworks fail to address fundamental contradictions between efficiency narratives and pedagogical complexity. The tension between standardization impulses (evident in competency requirements) and personalization promises (highlighted in microlearning approaches like [4]) requires new theoretical models. Concepts like "AI resilience" from [9] need expansion beyond technical definitions to encompass pedagogical and social dimensions. The field urgently needs frameworks that can bridge individual learning theories with systemic

[4] AI-Enabled Microlearning and Case Study Atomisation: ICT Pathways for Inclusive and Sustainable Higher Education

[9] Designing AI-Resilient Assessments Using Interconnected ...

implementation realities while accounting for power dynamics and equity considerations currently marginalized in mainstream discourse.

References

1. a five-tiered framework to generative AI in K-12 education
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4. AI-Enabled Microlearning and Case Study Atomisation: ICT Pathways for Inclusive and Sustainable Higher Education
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7. College students' literacy, ChatGPT activities, educational outcomes, and trust from a digital divide perspective
8. Community-engaged artificial intelligence: an upstream, participatory design, development, testing, validation, use and monitoring framework for artificial intelligence and machine learning models in the Alaska Tribal Health System
9. Designing AI-Resilient Assessments Using Interconnected ...
10. Generative AI in Education From the Perspective of Students, Educators, and Administrators
11. How to Trick Your AI TA: A Systematic Study of Academic Jailbreaking in LLM Code Evaluation
12. Innovación social académica en tiempos de capitalismo cognitivo: El caso de la Biblioteca de Prompts Colaborativos
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