

Systemic Thinking as an Ethical Stance: A Critical Assessment of Artificial Intelligence and Education in the Global South

El pensamiento sistémico como postura ética: una evaluación crítica de la inteligencia artificial y la educación en el Sur Global

O Pensamento Sistêmico como Postura Ética: Uma Avaliação Crítica da Inteligência Artificial e da Educação no Sul Global

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ABSTRACT

Artificial Intelligence and Education in the Global South: A Systems Perspective positions artificial intelligence (AI) not as an autonomous solution but as a sociotechnical component whose educational value depends on systemic alignment with curriculum, teacher development, assessment, governance, and local conditions. This review examines the book's core distinction between educational *improvement* and *transformation*, its methodological transparency regarding an uneven evidence base, and its sustained defence of human agency in AI-integrated systems. Three limitations are identified: a dependency on a still-emergent and geographically skewed literature; a breadth-over-depth tension inherent in covering nine educational domains in a single volume; and the risk of theoretical homogenization under the "Global South" category. Despite these limitations, the book provides a rigorous, equity-oriented analytical framework that is essential reading for education researchers, policymakers, teacher educators, and technology developers engaging with AI integration in under-resourced systems.

Keywords: *artificial intelligence, education, Global South, systems thinking, educational transformation*

RESUMEN

Artificial Intelligence and Education in the Global South: A Systems Perspective sitúa la inteligencia artificial no como una solución autónoma, sino como un componente sociotécnico cuyo valor educativo depende de una alineación sistémica con el currículo, la formación docente, la evaluación, la gobernanza y las condiciones contextuales. Esta reseña examina la distinción central de la obra entre mejora y transformación educativa, su transparencia metodológica frente a una base de evidencia aún incipiente y la defensa sostenida de la agencia humana en sistemas integrados por IA. Se identifican tres limitaciones: la dependencia de una literatura emergente y geográficamente concentrada; la tensión entre amplitud temática y profundidad empírica; y el riesgo de

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homogeneización teórica bajo la categoría de "Sur Global". A pesar de estas limitaciones, el libro ofrece una matriz analítica rigurosa y orientada a la equidad, de lectura indispensable para investigadores, gestores, formadores de docentes y desarrolladores de tecnología educativa en sistemas con escasos recursos.

Palabras clave: *inteligencia artificial, educación, Sur Global, pensamiento sistémico, transformación educativa.*

RESUMO

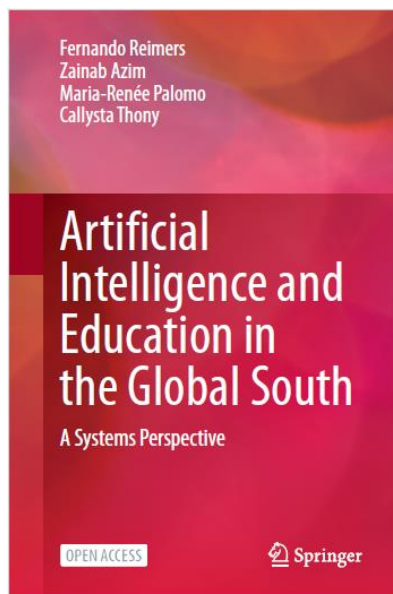
Artificial Intelligence and Education in the Global South: A Systems Perspective posiciona a inteligência artificial não como solução autônoma, mas como componente sociotécnico cujo valor educacional depende de alinhamento sistêmico com currículo, formação docente, avaliação, governança e condições contextuais. Esta resenha examina a distinção central da obra entre melhoria e transformação educacional, sua transparência metodológica diante de uma base de evidências ainda incipiente e a defesa sustentada da agência humana em sistemas integrados por IA. Três limitações são identificadas: dependência de uma literatura emergente e geograficamente concentrada; tensão entre amplitude temática e profundidade empírica; e risco de homogeneização teórica sob a categoria "Sul Global". Apesar dessas limitações, o livro oferece uma matriz analítica rigorosa e orientada pela equidade, de leitura indispensável para pesquisadores, gestores, formadores de professores e desenvolvedores de tecnologia educacional em sistemas de baixa disponibilidade de recursos.

Palavras-chave: *inteligência artificial, educação, Sul Global, pensamento sistêmico, transformação educacional*

1. INTRODUCTION

Artificial Intelligence and Education in the Global South is a work of academic and policy intervention. Fernando Reimers, Zainab Azim, Maria-Renée Palomo, and Callysta Thony address a deceptively simple question: can artificial intelligence *transform*—rather than merely improve—education in contexts defined by resource constraints, persistent structural inequalities, and limited institutional capacity? Their answer is neither celebratory nor dismissive. AI can support meaningful educational change, they argue, but only when understood as one component of a complex, interdependent educational ecosystem—not as a technological shortcut to deep-seated systemic problems. Figure 1 shows the cover of the authors' book.

Figure 1 - Cover of the book Artificial Intelligence and Education in the Global South: A Systems Perspective



Source: Reimers, F., Azim, Z., Palomo, M.-R., and Thony, C. (2026).

The analytical move is significant. Most literature on AI in education still operates with an adoption logic: whether and how a technology is introduced into classrooms. Reimers et al. (2026) replace that logic with a transformation standard, asking not whether AI *can be applied* to education but whether it can solve the most important education problems at scale, sustainably, and without reinforcing existing inequalities. That reframing from a technocentric to a systemic-political question is the book's most durable contribution.

Methodologically, this review proceeds by reconstructing the book's own analytical architecture — its recurring four-step procedure across chapters — and evaluating each of its central claims against three criteria: the internal coherence of the improvement/transformation distinction, the adequacy of the evidence marshalled in its support, and the applicability of its conclusions across the heterogeneous contexts subsumed under the “Global South” label. This explicit criterion set structures the discussion of contributions and limitations that follows.

2. ARGUMENTATIVE ARCHITECTURE

The book organizes its inquiry across nine chapters covering student learning, curriculum, assessment, teacher development, school management, and governance, plus a final synthesis. Each

chapter follows a consistent analytical procedure: identification of the most salient educational challenges in each domain; examination of AI's potential to address them; review of available evidence; discussion of ethical implications; and formulation of research questions. This structure is deliberate. It prevents individual chapters from functioning as catalogues of applications and instead obliges each section to measure AI against the specific demands of that educational domain.

The procedure is most productive in the chapters on assessment and teacher development, where the authors move well beyond automation (auto-graded tests, administrative chatbots) to examine formative uses: AI-generated feedback calibrated to rubrics assessing higher-order competencies, pedagogical planning support, simulation-based mentoring, and the explication of tacit pedagogical expertise. These discussions demonstrate the book's capacity to identify genuinely innovative applications while subjecting them to the same systemic scrutiny applied to more familiar ones.

3. CORE DISTINCTION: IMPROVEMENT VERSUS TRANSFORMATION — AND THE BOOK'S INTERNAL STRUCTURE

The book's most analytically productive move is its distinction between educational improvement and transformation — and it is this distinction that organizes the internal architecture of every chapter. Improvement, the authors argue, is achievable by almost any well-designed innovation: any technology, if properly implemented, can produce some localized gain. Transformation, by contrast, requires AI to address the most critical problems of educational systems across three specific domains that structure the entire inquiry: *AI literacy*, educational effectiveness for foundational skills in reading, writing, and numeracy, and curricular relevance for twenty-first-century competencies (Reimers et al., 2026, p. 2). These three domains are not merely chapter themes; they function as recurring evaluative criteria against which every AI application is judged throughout the book.

The standard is deliberately demanding because each of the three domains represents a distinct level of urgency and scale. The first domain — AI literacy — proceeds from the diagnosis that AI's transformation of the labour market creates a new and urgent educational demand: students need not only to use AI tools but to understand them critically, reason about their ethical implications, and cultivate distinctly human capacities — collaboration, moral judgment, creativity — that become more valuable precisely because AI cannot easily replace them (Reimers et al., 2026, p. 5). The second domain — effectiveness for foundational skills — is treated as the most pressing issue in the Global South: in systems where the majority of children have not yet mastered reading and writing,

AI must demonstrate that it can support, and not divert resources from, basic learning. The third domain — twenty-first-century relevance — asks whether AI can help education systems move beyond standardized curriculum delivery and develop competencies that were, in the authors' formulation, "previously out of reach" through traditional modes of instruction (Reimers et al., 2026, p. 5).

To examine these three domains consistently, the book's middle chapters — covering students and learning, curriculum, assessment, teacher development, school management, and governance — all follow the same four-step analytical procedure: identification of the most salient educational challenges in each area; analysis of AI's potential to address them; review of available evidence, rigorously distinguishing *documented applications* from *evaluated applications*; ethical discussion; and formulation of research questions for future agendas (Reimers et al., 2026, p. 3). This protocol prevents each chapter from functioning as a catalogue of tools and compels the argument to measure every technology against the transformation criteria established in the opening chapter. The outcome is revealing: in virtually every domain, the authors find evidence of incremental innovation — improvement in specific practices, localized gains, promising pilots — but rarely evidence of systemic transformation, which would require the simultaneous alignment of curriculum, teacher development, assessment, and governance (Reimers et al., 2026, p. 159–161).

The choice of the Global South as the unit of analysis is justified on both demographic and systemic grounds. Approximately 85% of the world's population and 90% of those under the age of 18 live in these countries (Reimers et al., 2026, p. 6), meaning that any educational transformation will have its greatest impact precisely there. But the authors' argument is not merely quantitative — it is one of opportunity cost. In contexts defined by scarce per-student resources and institutional fragility, the risk of adopting poorly adapted technologies is proportionally higher. The example the authors offer is precise: in a system where most children cannot yet read or write, an AI literacy curriculum that reaches a privileged minority while consuming resources earmarked for foundational skills is not just insufficient — it is "a distraction from addressing the elephant in the room," which is the system's failure to ensure that *all* children develop basic competencies (Reimers et al., 2026, p. 7). This formulation reframes the evaluative question entirely: the issue is not whether a tool works for some students, but whether it works for the most excluded, at scale, without widening the gap between those who already have access to quality resources and those who do not.

At the same time, the authors resist a homogeneous reading of the Global South. The category spans vastly different realities — Brazil, India, Nigeria, Bangladesh, Mexico, Pacific Island States — with differences not only between countries but within each country's regions, in terms of

connectivity, class sizes, teacher qualifications, languages of instruction, electrical infrastructure, and local governance capacity (Reimers et al., 2026, p. 7). Effective AI integration, the book therefore insists, must be attuned to local needs, priorities, languages, cultures, and pedagogies — not simply transferred from models developed in high-resource settings. This demand for contextual adaptation is simultaneously a theoretical contribution of the book and a practical evaluative criterion: AI technologies that perform well in well-equipped schools may need to be entirely reimagined for contexts of intermittent connectivity, large class sizes, or teachers with limited professional training — and when that reimagination is absent, a technological promise becomes yet another distraction.

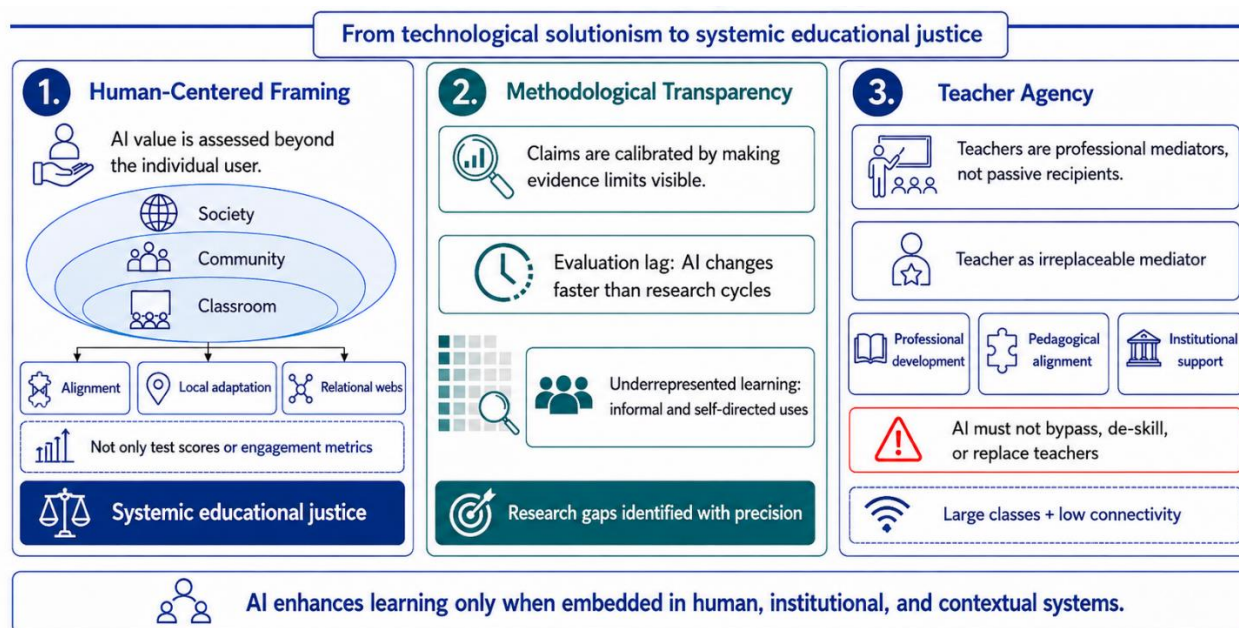
4. CONTRIBUTIONS

The book's first significant contribution is its human-centered framing. Drawing on the Stanford Institute for Human-Centered AI, the authors argue that AI's educational value must be assessed at the level of the classroom, community, and society—not merely the individual user—and that any integration must be guided by alignment, local adaptation, and relational webs that determine "whether AI enhances learning or simply adds complexity without benefit" (Reimers et al., 2026, p. 12). This framework resists the reductionism endemic to EdTech discourse, where outcomes are typically measured in test scores or engagement metrics rather than in systemic educational justice.

The second contribution is the book's methodological transparency. The authors acknowledge two structural limitations of their evidence base: the temporal lag between AI development and educational evaluation cycles (a year or more), and the systematic underrepresentation of informal, self-directed learning in published literature (Reimers et al., 2026, p. 3–4). By foregrounding these limitations rather than concealing them, the book enables readers to calibrate the scope of its claims and identifies with precision where empirical research is most urgently needed.

The third contribution is the consistent defence of teacher agency. Across all domains, teachers appear not as passive recipients of AI tools but as irreplaceable professional mediators. AI applications that bypass, de-skill, or substitute for teachers are treated as structurally incompatible with transformative education. This is not a rhetorical gesture: the argument rests on evidence that professional development, pedagogical alignment, and institutional support are necessary conditions for any technology to produce durable learning gains—particularly in large-class, low-connectivity contexts common across the Global South.

Figure 2 - Three Contributions of a Human-Centered Systems Approach to AI in Education²



Source: Reimers et al. (2026), *Artificial Intelligence and education in the Global South: A Systems perspective*.

Taken together, these three contributions — human-centered framing, methodological transparency, and the defence of teacher agency — do not operate as a checklist applied uniformly across chapters. Figure 2 synthesizes them as an integrated structure precisely because the book treats each one as a precondition for the other two: human-centered framing loses its force if the evidence base supporting it is concealed rather than disclosed, and methodological transparency is of limited value if it is not accompanied by an insistence that teachers, not algorithms, remain the final arbiters of pedagogical decisions. Read this way, the diagram is less an illustration than an argument in visual form: it proposes that transformative AI integration is achievable only when all three conditions hold simultaneously — a claim the book substantiates chapter by chapter rather than merely asserts in the abstract.

5. LIMITATIONS

The book is not without limitations. The first concerns the tension between analytical scope and empirical depth. Covering nine educational domains in a single volume inevitably trades granularity

² Bilingual conceptual diagram synthesizing three major contributions discussed in Reimers et al. (2026): human-centered framing, methodological transparency, and teacher agency. The figure was created by the review author with support from ChatGPT 5.6 Sol, using an author-designed prompt, based on Reimers et al. (2026).

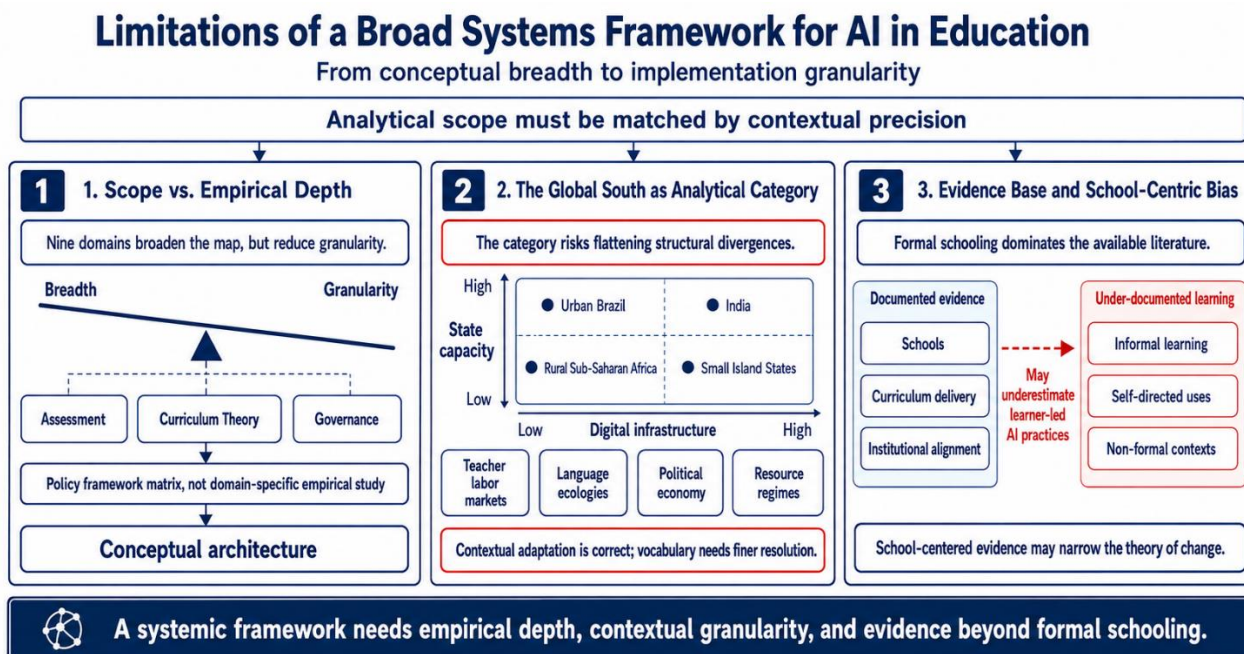
for breadth. Specialists in assessment, curriculum theory, or educational governance will find the analysis less dense than they might expect. The book functions more effectively as a policy framework matrix than as a domain-specific empirical study. This is not merely a matter of space: it is a conceptual limitation. A single evaluative standard — the improvement/transformation distinction — is applied uniformly to domains as heterogeneous as curriculum design, school management, and assessment, and the book does not always pause to ask whether transformation should mean the same thing, or be measured against the same evidentiary bar, in each of these domains.

The second limitation pertains to the analytical category itself. While the authors explicitly acknowledge that "the Global South is far from monolithic" and that "effective AI integration must therefore be attuned to local needs and priorities, languages, cultures, resources, and pedagogies" (Reimers et al., 2026, p. 7), the category still risks subsuming structural divergences that matter enormously for implementation. The digital infrastructure gaps between urban Brazil and rural sub-Saharan Africa, or between India and small island developing states, are not simply scalar differences—they reflect different state capacities, teacher labour markets, language ecologies, and political economies of education. The book's contextual adaptation call is correct; its analytical vocabulary is not always fine-grained enough to perform that adaptation. Recent empirical scholarship reinforces this concern: reviewing AI-enhanced pedagogies across higher education in the Global South, Khoza and van der Walt (2025) find that infrastructural and institutional constraints vary so substantially across contexts that outcomes attributed to AI adoption are rarely comparable across the region — a finding that corroborates the contention that the book's contextual vocabulary needs further disaggregation.

The third limitation follows from the evidence base problem the authors themselves identify. Given that the available literature is systematically biased toward formal schooling, the book's conclusions about what AI cannot do in schools may underestimate what learners are already doing with AI outside of them. The emphasis on curriculum delivery and institutional alignment may inadvertently reproduce a school-centric model of educational change at the very moment when AI tools are enabling significant learning in non-formal and autonomous contexts that remain undocumented. This limitation is analytical as well as empirical. By anchoring its ethical analysis in what can be documented within formal schooling, the book inherits the same evidentiary asymmetry that recent systematic reviews of AI ethics in education identify as a structural risk: Zhu, Sun, and Yang (2025) show that ethical-risk frameworks built primarily on institutional, classroom-based

evidence tend to underweight risks — and benefits — that emerge in informal or self-directed learning environments, precisely the blind spot this review identifies in Reimers et al. (2026).

Figure 3 - Limitations of a Broad Systems Framework for AI in Education³



Source: Reimers et al. (2026), *Artificial Intelligence and Education in the Global South: A Systems Perspective*.

Figure 3 synthesizes these three limitations — scope versus depth, the coarseness of the Global South as an analytical category, and the school-centric evidence base — not as isolated flaws but as symptoms of a single underlying tension: the book’s ambition to offer a comprehensive systemic framework necessarily trades some contextual and empirical precision for breadth of coverage. This trade-off does not diminish the book’s contribution; it defines the terms under which that contribution should be read and extended by future research.

6. CONCLUDING ASSESSMENT

Artificial Intelligence and Education in the Global South makes a strategic contribution to comparative education and educational technology research. Its most enduring value lies not in findings about any specific application but in the analytical framework it provides: a set of questions

³ Bilingual conceptual diagram synthesizing three major limitations discussed in Reimers et al. (2026): **(1)** scope versus empirical depth, **(2)** the Global South as an analytical category, and **(3)** the evidence base and school-centric bias. The figure was created by the review author with support from ChatGPT 5.6 Sol, using an author-designed prompt, based on Reimers et al. (2026).

about scale, equity, systemic alignment, teacher agency, ethical governance, and sustainable evidence that should precede, accompany, and follow any decision to integrate AI into an educational system.

The book refuses two equally inadequate positions: techno-optimism, which treats AI as inherently transformative, and reflexive scepticism, which rejects technology without examining its conditional possibilities. Its standard is more demanding than either: AI must prove its value against the hardest problems, under the most constrained conditions, for the most marginalized learners, without undermining the human relationships that constitute educationally meaningful experience. "Transformation will not come from technology alone," the authors state in their final pages. "It requires reimagining education as an adaptive, caring, democratic endeavor, anchored in local knowledge, shaped by teachers and learners, and overseen by inclusive, accountable governance" (Reimers et al., 2026, p. 166).

That is not a technological claim. It is a claim about the political and ethical conditions under which technology can be made to serve public education. Researchers and policymakers who accept that claim will find this book indispensable.

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