AI Literacy for Citizen Participation

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A curious paradox haunts our discourse on artificial intelligence in education. While institutions rush to develop AI literacy frameworks and governments mandate digital competencies, the very meaning of "literacy" in relation to AI remains deeply contested. This conceptual muddle isn't merely academic—it shapes who gets to participate in AI-mediated futures and on what terms.

The urgency is palpable. As [2] reveals through its integrative review of 124 studies, we're witnessing an explosion of literacy frameworks that range from narrow technical training to expansive critical engagements. Yet this proliferation masks fundamental disagreements about what citizens need to know about AI and why. The question isn't simply how to teach AI literacy, but whose literacy counts and for what purposes.

[2] AI Literacy in K-12 and Higher Education in the Wake of Generative AI

This analysis maps the contested terrain of AI literacy, examining how different definitions serve different interests and what current approaches systematically exclude. By tracing the tensions between skills-based and critical frameworks, we can begin to understand why our literacy efforts often fail to prepare people for meaningful participation in AI-governed societies.

Competing Definitions and Their Politics

The battle over AI literacy begins with definition. On one side, we find competency-based frameworks that emphasize practical skills—understanding how AI works, using AI tools effectively, recognizing AI applications. The [14] exemplifies this approach, offering K-12 educators a structured progression from basic awareness to advanced application. These frameworks promise measurable outcomes and clear learning objectives.

[14] PDF AI Literacy: A Framework to Understand, Evaluate, and Use Emerging

Yet as [22] argues, technical competence alone cannot address the power dynamics embedded in AI systems. Their RACBAC framework (Representation, Access, Context, Bias, Authority, Currency) demonstrates how critical literacy requires interrogating not just how AI works, but whose knowledge it encodes and whose interests it serves.

[22] Proposing A Critical AI Literacy Framework for Academic Librarians: A Case Study of a Database-Anchored GenAI Tool for Chinese Studies

The French education ministry's comprehensive guide [16] attempts

[16] PDF Intelligence artificielle et éducation - pedagogie.ac-clermont.fr

to bridge these approaches, offering ”10 repères” that combine technical understanding with ethical reflection. Yet even this sophisticated framework struggles with a fundamental tension: can we teach critical engagement with systems whose operations remain opaque even to their creators?

This definitional contest reflects deeper political stakes. When [17] reveals how young people use AI chatbots for emotional support and identity exploration, it becomes clear that literacy isn't just about technical skills or critical analysis—it's about navigating intimate relationships with synthetic intelligences that blur traditional boundaries.

[17] PDF JULY 2025 Me, myself and AI - Internet Matters

The Skills Fixation and Its Limits

The dominant approach to AI literacy fixates on skills acquisition. Students learn to craft effective prompts, evaluate AI outputs, and integrate tools into workflows. [6] argues for adding prompt engineering to the canon of 21st-century competencies, complete with assessment rubrics and learning progressions.

[6] Frontiers | Prompt engineering as a new 21st century skill

This skills emphasis offers clear pedagogical advantages. [1] identifies five distinct interaction profiles and shows how targeted training shifts students from passive consumers to strategic users. The appeal is obvious: concrete objectives, measurable outcomes, immediate applicability.

[1] AI in the classroom: Exploring students' interaction with ChatGPT in programming learning

Yet the skills paradigm contains its own limitations. As [3] demonstrates, students who master technical operations may still struggle with epistemological questions about AI-generated knowledge. They can prompt effectively but cannot evaluate the validity of synthetic texts or understand how training data shapes outputs.

[3] AI Literacy in the Context of Working with Sources: Pitfalls and Possibilities of Generative AI Models in Academic Writing

More troubling, the skills focus can obscure power relations. [12] reveals through bibliometric analysis how skills-based frameworks dominate funded research and policy documents, crowding out critical perspectives. When literacy becomes synonymous with tool use, we risk training compliant users rather than informed citizens.

[12] Navigating the landscape of AI literacy education: insights from a

The European Schools framework [18] attempts balance by mandating both technical competencies and critical reflection. Yet even here, the practical dominates—detailed rubrics for prompt construction vastly outnumber guidelines for interrogating AI's societal impacts.

[18] PDF Lignes directrices pédagogiques pour légales et l'utilisation

Critical Literacies and Democratic Stakes

A counter-tradition emphasizes critical AI literacy—the capacity to question, resist, and reshape AI systems. This approach draws from critical media literacy, treating AI not as neutral technology but as politically charged infrastructure that shapes possibilities for thought and action.

[7] maps how generative AI creates new vectors for misinformation while simultaneously promising solutions. Their multi-level framework (individual, community, system) reveals how literacy must engage not just personal skills but collective capacities for verification and resistance.

[7] GenAI and misinformation in education: a systematic scoping review of

The democratic stakes become vivid in [20], which documents AI's capacity to shift political opinions through conversational engagement. If AI can persuade more effectively than human canvassers, literacy must include recognizing and resisting algorithmic influence—skills rarely addressed in conventional frameworks.

[20] Persuading Voters Through Human-AI Dialogues

UNESCO's report [10] frames synthetic media as an epistemological crisis requiring new forms of collective sense-making. Their three-pillar approach (detection, regulation, education) acknowledges that individual literacy alone cannot address systemic challenges to shared reality.

[10] Les deepfakes et la crise du savoir - UNESCO

Yet critical literacy faces its own contradictions. [9] documents innovative pedagogical projects from French academies, but reveals how critical approaches struggle with implementation. Teachers equipped to foster critical thinking often lack technical knowledge, while those comfortable with tools may resist political critique.

[9] L'urgence d'une véritable littératie de l'IA pour l'autonomisation des

The Missing Pieces: Power, Context, and Agency

Current literacy frameworks, whether skills-based or critical, systematically exclude crucial dimensions. Most glaring is the absence of power analysis—who controls AI systems, who profits from their deployment, who bears the risks of their failures.

[4] exposes this gap by analyzing AI's contradictory impacts on disability employment. While frameworks celebrate AI's assistive potential, they rarely address how the same systems can entrench discrimination through biased training data or inaccessible interfaces.

[4] AI's double-edged sword: A new frontier for employment of people with

Context-sensitivity represents another systematic absence. [5] reveals how literacy levels vary dramatically across disciplines, yet most frameworks assume universal applicability. A literature student needs

[5] Bridging AI Literacy and Technology Adoption Among Students

different competencies than an engineer, but standardized approaches flatten these distinctions.

Agency—the capacity not just to use or critique but to shape AI systems—remains largely unaddressed. [23] identifies equity gaps in AI adoption, showing how marginalized communities are positioned as consumers rather than creators of AI solutions. Without agency, literacy becomes adaptation to predetermined futures rather than participation in their construction.

[23] What's Missing From Your School's AI Adoption Plan? A Roadmap for

The institutional blindness to these dimensions isn't accidental. As [21] demonstrates through meta-synthesis of policy documents, frameworks that emphasize compliance and risk management dominate institutional adoption. Power, context, and agency introduce complexities that bureaucratic structures prefer to avoid.

[21] Policy guidelines and recommendations on AI use in teaching and

Toward Participatory Frameworks

Emerging alternatives point toward participatory approaches that treat literacy as collective capacity-building rather than individual skill acquisition. These frameworks recognize that meaningful AI literacy requires not just understanding systems but participating in their governance.

[13] offers a promising model through its four-phase implementation process: Sensemaking, Assessment, Adaptation, and Sustainability. Crucially, this approach embeds literacy development within institutional transformation, recognizing that individual competencies mean little without supportive structures.

[13] PDF AI Literacies in Focus: From Frameworks to Action | Comparative

Community-based initiatives provide another path. [8] critiques individualized learning narratives while documenting collective experiments in AI governance. When communities rather than individuals become the unit of literacy, different questions emerge: How do we make collective sense of AI impacts? How do we negotiate shared values for AI use?

[8] Inteligencia artificial y personalización del aprendizaje: ¿innovación educativa o promesas recicladas?

[15] gestures toward participatory governance through its recommendation for educator involvement in AI policy. Yet even this progressive document stops short of genuine power-sharing, maintaining traditional hierarchies between developers, administrators, and users.

[15] PDF Artificial Intelligence and the Future of Teaching and Learning

The challenge isn't simply adding participation to existing frameworks but fundamentally reconceptualizing literacy as collective capability. [11] proposes trust-building through transparent communication and inclusive planning, yet trust without power remains vulnerability to decisions made elsewhere.

[11] Making AI work for schools - Brookings

Reframing the Question

After mapping this contested terrain, we return to our opening question with new understanding. "How are we teaching people to understand AI?" reveals itself as the wrong question—or at least an incomplete one. The deeper issues concern who defines understanding, whose interests literacy serves, and what forms of agency we enable or foreclose.

Current approaches, whether focused on skills or critique, share a fundamental limitation: they position people as responders to AI rather than shapers of it. Even critical frameworks often teach resistance to systems assumed to be inevitable rather than imagination of alternatives. We train people to prompt better or spot deepfakes, but not to question why AI development follows particular trajectories or to envision different possibilities.

[19] offers hope through its documentation of 58 educational initiatives against AI-powered disinformation. Yet its most valuable insight may be methodological: the recognition that combating AI harms requires collective experimentation rather than standardized solutions.

[19] PDF Éduquer contre la désinformation amplifiée par l'IA et l'hypertrucage

The path forward requires acknowledging that AI literacy cannot be separated from broader questions of technological democracy. As long as AI development remains concentrated in few hands, literacy efforts will remain reactive, teaching adaptation to systems designed elsewhere for purposes we don't control. True literacy would mean participation in fundamental decisions about AI's role in society—not just how to use it, but whether and why to build it at all.

This isn't an argument against teaching practical skills or critical analysis. Both remain necessary. But they become sufficient only when embedded in frameworks that enable genuine agency—the capacity not just to use or resist but to redirect AI's development toward collective flourishing. Until we expand our conception of literacy to include this participatory dimension, we'll continue preparing people for an AI-shaped world rather than empowering them to shape AI's place within it.

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4. AI's double-edged sword: A new frontier for employment of people with

5. Bridging AI Literacy and Technology Adoption Among Students

6. Frontiers | Prompt engineering as a new 21st century skill

7. GenAI and misinformation in education: a systematic scoping review of

8. Inteligencia artificial y personalización del aprendizaje: ¿innovación educativa o promesas recicladas?

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