AI Literacy for Citizen Participation

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The rush to define "AI literacy" reveals more about our anxieties than our understanding. As artificial intelligence systems reshape everything from classroom dynamics to democratic discourse, a proliferation of frameworks, models, and competency lists has emerged—each claiming to capture what citizens need to know about AI. Yet beneath this apparent consensus lies a fundamental tension: are we teaching people to use AI tools, or to understand AI as a sociotechnical system with profound implications for power, participation, and democracy?

The urgency is palpable. Research from [8] reveals that while AI adoption soars, actual understanding remains shallow—students who use ChatGPT most frequently often understand it least. This gap between use and comprehension reflects a deeper conceptual muddle. When [17] proposes seven distinct dimensions of AI literacy—technical, applicational, critical thinking, ethical, social, integrational, and legal—it acknowledges what simpler frameworks miss: AI literacy cannot be reduced to a single skill set or perspective.

[8] College students' literacy, ChatGPT activities, educational outcomes, and trust

[17] The AI Literacy Heptagon: A Structured Approach to AI Literacy in ...

The stakes extend far beyond individual competence. As [2] warns, AI systems now possess the capacity to flood public discourse with synthetic content, eroding the very foundations of democratic deliberation. In this context, AI literacy becomes not merely an educational objective but a prerequisite for meaningful citizenship. Yet our current approaches to AI literacy education remain fragmented, contested, and often inadequate to the challenge.

[2] AI bot swarms threaten to undermine democracy

The Proliferation of Frameworks: When Everyone Has a Model

The landscape of AI literacy frameworks resembles a conceptual bazaar, with each vendor claiming to offer the complete package. UNESCO's approach, detailed in [13], emphasizes ten key principles ranging from technical understanding to ethical reflection. Meanwhile, [4] proposes a three-pronged approach focused on understanding, evaluation, and application.

[13] PDF Intelligence artificielle et éducation

[4] AI Literacy: A Framework to Understand, Evaluate, and Use Emerging Technology

This proliferation isn't merely academic excess—it reflects genuine disagreement about what AI literacy entails. The comprehensive [15] argues that AI literacy must encompass not just functional skills but

[15] PDF RAPPORT OCTOBRE 2025 Déployer une littératie en IA pour une

critical capacities for "emancipation and inclusion." This expansive vision contrasts sharply with more pragmatic approaches that focus on immediate classroom applications.

What emerges from this comparison is not chaos but pattern. Most frameworks share certain core elements: technical understanding (how AI works), practical application (how to use AI tools), critical evaluation (assessing AI outputs and impacts), and ethical consideration (understanding implications and responsibilities). Yet they diverge significantly in emphasis, scope, and underlying assumptions about AI's role in society.

The seven-dimensional Heptagon model represents perhaps the most ambitious attempt at synthesis. By explicitly including legal and integrational dimensions alongside more common elements, it acknowledges that AI literacy extends beyond individual competence to systemic understanding. As [3] demonstrates through its rigorous literature review, the field is moving toward more sophisticated, multifaceted conceptions of what it means to be AI literate.

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

Skills Versus Understanding: The Fundamental Divide

Scratch beneath the surface of any AI literacy framework and you'll find a fundamental tension between teaching people to use AI effectively and helping them understand AI critically. This divide manifests clearly in educational practice. On one side, [1] showcases the transformative potential of AI tools for accessibility and personalized learning. On the other, [9] warns of AI's dual capacity to both generate and detect misinformation, requiring critical evaluation skills that transcend mere tool use.

[1] AccessiLearnAI: An Accessibility-First, AI-Powered E-Learning ... - MDPI

[9] Generative AI and misinformation: a scoping review of the role of ...

This tension reflects deeper philosophical disagreements about technology's role in education and society. The skills-based approach, evident in many institutional guidelines like [11], treats AI as a neutral tool requiring proper handling. Students learn prompt engineering, output evaluation, and ethical use guidelines—essentially, how to be responsible AI operators.

[11] PDF Charte sur l'utilisation de l'Intelligence Artificielle

The critical understanding approach, by contrast, positions AI as a sociotechnical system embedded in power relations and political economies. Research like [16] reveals how AI systems encode and amplify cultural biases, requiring literacy that goes beyond operational competence to systemic critique.

[16] Student Research Examines Loyalties of Language Models

Educational institutions find themselves caught between these approaches. As [6] demonstrates through structural equation modeling,

[6] Bridging AI Literacy and UTAUT constructs: structural equation ... - Nature

successful AI adoption requires both perceived usefulness (skills) and deeper understanding of social and ethical implications. Yet most curricula struggle to balance these demands, often defaulting to skills training while paying lip service to critical perspectives.

The Democratic Deficit: What's Missing from Current Frameworks

For all their sophistication, current AI literacy frameworks share a critical blind spot: they inadequately address AI's implications for democratic participation. While [7] poses the optimistic question, the reality documented in [5] suggests AI currently threatens more than supports democratic discourse.

[7] What if we used AI to strengthen democracy?

[5] Trump's use of AI images further erodes public trust, experts say

The problem runs deeper than misinformation. As [7] illustrates, AI-generated content doesn't merely spread false information—it undermines the epistemological foundations of public discourse. When citizens can no longer trust their senses, when any image or video might be synthetic, the shared reality necessary for democratic deliberation dissolves.

[7] Deepfakes et élections en Afrique : la prochaine grande menace démocratique

Current AI literacy frameworks acknowledge these challenges but offer inadequate responses. Teaching people to identify deepfakes, while necessary, addresses symptoms rather than causes. The deeper challenge lies in understanding AI as infrastructure for public discourse—infrastructure that can be designed to concentrate or distribute power, to amplify or suppress voices, to enable or constrain participation.

What's missing is what we might call "democratic AI literacy"—understanding not just how to detect AI-generated content but how AI systems shape the conditions of public discourse itself. This includes recognizing how recommendation algorithms create filter bubbles, how automated moderation systems encode cultural biases, and how synthetic media technologies redistribute the power to shape public perception.

[5] offers a hint of what democratic AI literacy might entail. By investigating public priorities for AI transparency, it reveals citizens' desire not just to identify AI systems but to understand their operations and hold them accountable. This participatory approach to AI governance requires literacy that current frameworks barely address.

[5] Building Trust: Public Priorities for Health Care AI Labeling

Cross-Domain Implications: Why AI Literacy Matters Everywhere

The inadequacies of current AI literacy frameworks become most apparent when we examine AI's cross-domain impacts. In education, [10] documents how AI-generated content targets vulnerable populations. In the workplace, [7] reveals growing skills gaps as AI transforms labor markets. In civic life, the erosion of trust documented across multiple studies threatens the foundations of democratic society.

[10] Des trucages vidéo à la manipulation en ligne : la menace que fait peser l'IA sur les enfants

[7] Cedefop : Transitions numériques centrées sur l'humain et inadéquation des compétences sur les lieux de travail européens

These cross-cutting challenges reveal AI literacy as more than an educational concern—it's a fundamental requirement for participation in contemporary society. Yet our frameworks remain largely siloed within educational contexts. [5] rightly asks what competencies future graduates need, but the answer extends beyond individual skills to collective capacities for governance and resistance.

[5] Former à l'ère de l'IA : quelles compétences clés pour les futurs diplômés ?

Consider privacy, a concern that cuts across all domains. [10] exposes how AI companions collect intimate data, while [10] reveals widespread public concern about AI data practices. Yet most AI literacy frameworks treat privacy as a discrete topic rather than a fundamental aspect of AI's political economy.

[10] Et si votre compagnon virtuel alimenté par l'IA était incapable de préserver votre confidentialité ?

[10] Cisco 2026 Data and Privacy Benchmark Study

The same pattern repeats with bias, transparency, and accountability. Current frameworks acknowledge these as important topics but fail to connect them to broader questions of power and participation. Understanding that AI systems reflect training data biases is important; understanding how those biases shape access to opportunities, reinforce social hierarchies, and influence democratic outcomes is essential.

Who Defines Literacy? The Politics of AI Education

Perhaps the most revealing question about AI literacy is who gets to define it. The landscape of frameworks reveals a striking pattern: definitions emerge primarily from academic institutions, government agencies, and technology companies—rarely from communities most affected by AI systems. [12] stands out for actually consulting parents and students, revealing significant gaps between institutional definitions and community concerns.

[12] PDF Intelligence artificielle en milieu scolaire - Point de vue des parents ...

This top-down approach to defining AI literacy reproduces existing power imbalances. When [14] establishes guidelines for European schools, it does so through bureaucratic processes far removed from classroom realities. When technology companies promote AI literacy

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

initiatives, they often focus on skills that create better customers rather than critical citizens.

The absence of marginalized voices is particularly striking. While [10] advocates for children's rights in AI governance, children themselves rarely participate in defining what AI literacy means for them. Communities experiencing algorithmic discrimination, surveillance, or exclusion might define AI literacy very differently than those designing the systems.

[10] Du code à l'enfance : Pourquoi l'intelligence artificielle et les droits de l'enfant doivent désormais être non négociables

This democratic deficit in defining AI literacy matters because literacy is never neutral. As [10] recognizes, different stakeholders need different competencies. Workers facing AI-driven automation need literacy for resistance and adaptation. Communities under algorithmic surveillance need literacy for protection and advocacy. Citizens in AI-mediated democracies need literacy for participation and accountability.

[10] Outiller les professionnel(le)s pour faire face à l'intelligence artificielle

Toward a More Complete Framework

Synthesizing these insights suggests the need for a more expansive, politically aware conception of AI literacy. Rather than choosing between skills and critical understanding, we need frameworks that connect operational competence to systemic awareness. Rather than treating AI literacy as individual achievement, we need approaches that build collective capacity for governance and resistance.

Several recent initiatives point toward this more complete vision. [17], despite its mechanistic name, attempts to integrate technical, ethical, social, and legal dimensions. [5] uses expert consensus to identify competencies that span individual and collective action. These frameworks still fall short of fully addressing democratic participation, but they represent movement in the right direction.

[17] The AI Literacy Heptagon: A Structured Approach to AI Literacy in ...
[5] AI Skills for Life and Work: Delphi Study

A truly comprehensive AI literacy framework would need several elements currently missing or marginalized in existing approaches. First, it must address power explicitly—not just as an ethical concern but as a fundamental aspect of how AI systems operate in society. Second, it must include capacities for collective action, not just individual competence. Understanding how to organize for algorithmic accountability matters as much as understanding how algorithms work.

Third, it must be developed through genuinely participatory processes that center affected communities. The paternalistic approach of defining literacy for rather than with communities reproduces the very power imbalances AI literacy should help address. Finally, it must

connect AI literacy to broader struggles for digital rights, economic justice, and democratic participation.

Conclusion: Literacy as Liberation

The proliferation of AI literacy frameworks reflects genuine urgency about preparing citizens for an AI-permeated world. Yet our analysis reveals that current approaches, while sophisticated in their treatment of skills and ethics, inadequately address AI's implications for democratic participation and collective agency. We are teaching people to be competent users of AI tools while failing to prepare them as citizens capable of governing AI systems.

This matters because AI literacy, properly conceived, is not about accommodation but transformation. It's not enough to teach people to identify deepfakes or write better prompts. We need literacy that enables citizens to understand AI as infrastructure, to recognize how it shapes possibilities for collective action, and to participate meaningfully in decisions about its development and deployment.

The path forward requires moving beyond the false dichotomy of skills versus critical understanding to embrace AI literacy as fundamentally political education. This doesn't mean abandoning practical competencies—citizens need to understand how AI systems work to govern them effectively. But it does mean embedding those competencies within frameworks that address power, participation, and collective agency.

As AI systems become infrastructure for education, work, and civic life, the stakes of AI literacy rise accordingly. The question is not whether we need AI literacy—that much is clear—but what kind of literacy we develop and who gets to shape it. The current moment offers an opportunity to move beyond narrow, instrumental conceptions toward literacy as a tool for democratic empowerment. Whether we seize that opportunity will shape not just individual capabilities but collective possibilities for governing our AI-mediated future.

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