

Artificial Intelligence and Media and Information Literacy in Africa: A Framework for Trust, Critical Evaluation, and Ethical Engagement, Kenya

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Abstract

The rapid integration of artificial intelligence (AI) into media ecosystems is reshaping how information is produced, distributed, and consumed, raising urgent concerns about trust, misinformation, and public understanding. Traditional Media and Information Literacy (MIL) frameworks, designed for human-generated content, are insufficient for AI-mediated communication. Guided by a systematic literature review of 68 sources following PRISMA principles, this paper synthesises scholarship across media studies, communication, and AI ethics to identify conceptual gaps in existing approaches and to develop an AI-Integrated Media and Information Literacy (AI-MIL) framework. The framework integrates five interdependent components—algorithmic awareness, critical evaluation of AI content, trust calibration, ethical engagement, and digital inclusion—into a dynamic, non-linear model. Foregrounding African and Global South realities of mobile-first access, encrypted-network misinformation, linguistic diversity, and structural inequality, it reconceptualises literacy as calibrated trust and critical engagement rather than blanket scepticism. The framework offers theoretical advancement and practical relevance for media education, policy, and development communication in AI-driven information societies and yields five testable propositions to guide future empirical research in African contexts.

Keywords: AI Literacy, Media and Information Literacy, Algorithmic Awareness, Trust Calibration, Misinformation, Global South, Digital Inclusion, Ethical Engagement

Introduction

The proliferation of artificial intelligence across global media ecosystems is one of the most consequential transformations in the history of human communication. From algorithmic news curation and AI-generated content to deepfakes, synthetic voices, and automated factchecking, AI has become a pervasive architect of how information is produced, distributed, and consumed (Diakopoulos, 2019; Flew, 2021). This raises questions that existing Media and Information Literacy (MIL) frameworks are poorly equipped to answer: how do citizens evaluate information whose production they cannot see, calibrate trust in systems whose logic is deliberately opaque, and engage ethically with tools that blur the line between human and machine authorship?

Three intersecting crises define contemporary information environment. First, a crisis of misinformation: generative systems now produce text, images, audio, and video indistinguishable from authentic content, creating what Schick (2020) termed an “infocalypse,” a risk that the World Economic Forum (2025) ranks among the most severe facing societies over the next two years. Second, a crisis of trust: global trust in news has stalled near 40%, yet majorities cannot reliably distinguish true from false online content, with concern highest in Africa at 73% and peaking at 84% in Nigeria (Newman et al., 2025). Third, a crisis of comprehension: even educated citizens struggle to understand how algorithmic systems shape their information environmental condition Resnick et al. (2014) anticipated and that generative AI has deepened.

These crises expose limitations in traditional MIL. The UNESCO (2013) framework was designed for a media ecology of identifiable human authors and nominally transparent editorial processes. Large language models, generative platforms, and recommendation systems have rendered many of those assumptions obsolete. UNESCO has since issued dedicated AI competency frameworks (Miao & Cukurova, 2024; Miao & Shiohira, 2024), but these were developed largely in parallel with MIL scholarship and with limited cross-fertilisation—reproducing rather than resolving the conceptual gap this paper addresses.

This paper makes four contributions. First, it advances MIL theory by integrating algorithmic and AI-mediated dynamics into a unified framework, extending models that predate generative AI (Livingstone, 2004; UNESCO, 2013). Second, it reorients AI literacy’s predominantly technical focus toward a citizen-centred model grounded in critical media theory (Long & Magerko, 2020; Ng et al., 2021; Selwyn, 2019). Third, it introduces trust calibration as a central meta-cognitive competency, building on credibility and epistemic-vigilance research (Metzger et al., 2010; Pennycook & Rand, 2021; Sperber et al., 2010). Fourth, it offers a Global South-oriented reconceptualisation that foregrounds structural inequality, platform ecologies, and linguistic diversity often marginalised in existing frameworks (Ndemo & Weiss, 2017; Wasserman & Madrid-Morales, 2019). Section 2 reviews literature; Section 3 presents the theoretical and conceptual framework; Section 4 details the methodology; Section 5 reports findings; Section 6 discusses implications; and Sections 7 and 8 conclude.

The primary contribution of this study is the development of an AI-Integrated Media and Information Literacy (AI-MIL) framework that reconceptualises literacy as a dynamic interplay of algorithmic awareness, critical evaluation, trust calibration, ethical engagement, and digital inclusion. By integrating these dimensions within an African and Global South context, the framework extends existing MIL and AI literacy scholarship and provides a theoretically grounded foundation for future empirical research. In doing

so, the study contributes new conceptual knowledge to communication scholarship by repositioning trust calibration as a central competency for navigating AI-mediated information environments.

Literature Review

Media and Information Literacy: Foundations and Evolution

MIL emerged in the late twentieth century from media education, library science, and critical pedagogy, premised on the claim that democratic participation requires not merely access to information but the capacity to evaluate and use it critically (Livingstone, 2004; UNESCO, 2013). Early scholarship drew on the Frankfurt School's emphasis on media ownership and ideology (Adorno & Horkheimer, 1944; McChesney, 2008), while Masterman (1985) framed media education as the cultivation of "critical autonomy." Digital media prompted revisions: Buckingham (2006), Hobbs (2010), and Jenkins et al. (2009) extended MIL from passive reception to active participation, with Hobbs's competencies—access, analyse, evaluate, create, reflect, act—proving especially influential. In Africa, scholars have stressed that Western frameworks require adaptation to media systems shaped by colonial histories, state broadcasting, mobile-first communication, and oral traditions (Banda, 2009; Olorunnisola & Martin, 2013; Wasserman, 2011).

AI Literacy: An Emerging Framework

A distinct AI-literacy scholarship has developed alongside MIL. Long and Magerko (2020) define AI literacy as the competencies that enable individuals to critically evaluate AI, collaborate with it, and use it as a tool; Ng et al. (2021) propose four dimensions—knowing, using, evaluating, and the ethics of AI; and Selwyn (2019) insists AI literacy must address the social, economic, and political contexts of AI systems, not only their mechanics. "Algorithmic literacy" has received particular attention: Resnick et al. (2014) coined "algorithmic awareness," and subsequent work finds awareness of curation to be low even among heavy users and associated with greater misinformation susceptibility (Eslami et al., 2015; Swart, 2021). Recent African evidence sharpens these concerns: studies of universities in Ghana and Nigeria document uneven AI literacy across affective, behavioural, cognitive, and ethical dimensions (Asghar et al., 2025), while research with Ghanaian teachers and on South African schooling highlights large gaps between AI adoption and pedagogical readiness (Arkorful et al., 2025; Cross & Feldman, 2025). Notably, Ndungu (2024) proposes integrating basic AI literacy into MIL programmes for librarians and educators—an effort this paper extends from institutional service provision toward a citizen-centred, Global South model. More recent scholarship further distinguishes algorithmic literacy, AI literacy, and responsible generative-AI literacy as related but analytically distinct competencies (Cox, 2024).

Trust, Misinformation, and Algorithmic Environments

Trust is central to both MIL and information science. Metzger et al. (2010) distinguish credibility evaluation at the level of messages, sources, and institutions. In AI-mediated environments, traditional heuristics—institutional reputation, journalistic authority, editorial standards—are systematically subverted by synthetic content and algorithmic amplification (Pennycook & Rand, 2021). Wardle and Derakhshan (2017) typologise "information disorder" into misinformation, disinformation, and malinformation, all amplified by generative systems. Survey evidence confirms continuing decline and volatility in media trust alongside cognitive overload from information volume (Bawden & Robinson, 2009; Newman et al., 2025).

Gaps in Existing Scholarship

A critical synthesis reveals four structural gaps. First, MIL frameworks were not designed for content lacking identifiable human authors or editorial processes (Wardle & Derakhshan, 2017). Second, AI-literacy frameworks—and even UNESCO’s 2024 competency frameworks—orient ethical analysis toward designers rather than citizen users and remain largely separate from MIL’s democratic-citizenship tradition (Jobin et al., 2019; Miao & Shiohira, 2024; Selwyn, 2019). Third, neither tradition adequately theorises trust calibration in AI-mediated environments. Fourth, and critically, neither adequately theorises AI-mediated environments for Global South populations marked by uneven access and limited AI-literacy infrastructure. Table 1 summarises these comparative gaps.

Table 1: Comparative Analysis of Existing MIL and AI Literacy Frameworks

Dimension	Traditional MIL	AI Literacy	AI-MIL (Proposed)
Primary focus	Critical media evaluation; source credibility; institutions	Algorithm understanding; AI tool use; designer ethics	Integrated evaluation, trust calibration, ethics, inclusion
Trust theory	Institutional credibility heuristics	Largely absent	Explicit trust-calibration model across heuristic levels
AI content detection	Absent	Partial — technical detection focus	Detection, contextualisation, and verification habits
Algorithmic awareness	Minimal — ownership focus	Central — algorithmic mechanics	Algorithmic agency — critical navigation
Global South applicability	Limited — needs adaptation	Largely absent	Explicit — inclusion as a structural component
Ethical scope	Citizenship; representation; access	Design ethics; fairness; bias	User-centred ethics; responsible amplification; data rights

Note. MIL = Media and Information Literacy; AI-MIL = AI-Integrated Media and Information Literacy. Sources: Hobbs (2010); Long & Magerko (2020); Ng et al. (2021); Selwyn (2019); UNESCO (2013).

Critical Tensions in Existing Frameworks

Two tensions remain unresolved. MIL retains a human-centred epistemology that assumes identifiable authorship and transparent production (Hobbs, 2010; Livingstone, 2004), whereas AI literacy prioritises technical understanding and design ethics, often neglecting the communicative implications of algorithmic mediation (Jobin et al., 2019; Selwyn, 2019). The two also diverge on agency: MIL emphasises critical autonomy and participation (Buckingham, 2006; Masterman, 1985), while AI literacy frequently positions users as passive recipients of systems designed elsewhere (Pasquale, 2015; van Dijck et al., 2018). These tensions are sharpest in Global South contexts, where structural inequalities further constrain participation (Kwet, 2019; Ndemo & Weiss, 2017)—underscoring the need for an integrative framework that the AI-MIL model seeks to provide.

Theoretical and Conceptual Framework

The AI-MIL framework draws on three traditions—trust theory, media dependency theory, and digital literacy scholarship—each offering an analytical lens on the relationship between citizens and AI-mediated environments, and each requiring critical extension for the AI era.

Trust Theory

Metzger et al. (2010) treat credibility as a perceived quality evaluated at the level of messages, sources, and institutions, while Luhmann (1979) theorises trust as a mechanism for reducing complexity that lets citizens act without exhaustive verification. AI-mediated environments produce “epistemic overload” (Bawden & Robinson, 2009) in which this mechanism is exploited at scale, making calibrated trust—rather than blanket trust or scepticism—the critical competency, with epistemic vigilance (Sperber et al., 2010) as its psychological foundation. Critically, however, these accounts were developed for interpersonal and institutional settings and under-theorise machine agency: epistemic vigilance assumes detectable cues of source reliability that synthetic content erases, so trust theory must be extended to environments in which the “source” may be a generative model with no human warrant.

Media Dependency Theory

Ball-Rokeach and DeFleur (1976) argue that reliance on media intensifies as societies grow more complex and alternatives diminish, producing cognitive, affective, and behavioural effects proportional to dependence. As algorithmic platforms become the primary information environment for growing populations, these effects deepen; the framework engages this through Algorithmic Awareness, which aims at reflexive rather than passive dependency—Swart’s (2021) “algorithmic agency.” Yet the theory is a macro-level account that predates personalised curation: it treats “the media system” as relatively monolithic and says little about how individual-level personalisation differentiates dependency or how users might resist it—limitations the framework addresses by foregrounding agency.

Digital Literacy Scholarship

The framework builds on Buckingham’s (2006) components of representation, language, production, and audience, and on Hobbs’s (2010) procedural model, extending both to algorithmic and AI-generated content; the transliteracy tradition (Thomas et al., 2007) supplies a rationale for competency across platforms. This scholarship, however, was largely developed in Global North school contexts, assumes identifiable authorship and stable platforms, and risks reducing literacy to competency checklists that lag rapidly evolving AI affordances—which is why the AI-MIL framework treats structural access as constitutive rather than incidental.

Conceptual Framework: The AI-MIL Model

Figure 1 presents the framework as an ecology of five interdependent components rather than a linear hierarchy. Algorithmic Awareness enables Critical Evaluation; Critical Evaluation informs Trust Calibration; Trust Calibration shapes Ethical Engagement; and Digital Inclusion is the structural condition of possibility for all four. The core claim is that the primary threat to informed citizenship in the AI era is not merely the abundance of false information but the structural conditions of AI-mediated environments—

opacity, personalisation, synthetic content, and unequal access—that undermine citizens’ capacity to know what they know and trust what they encounter.

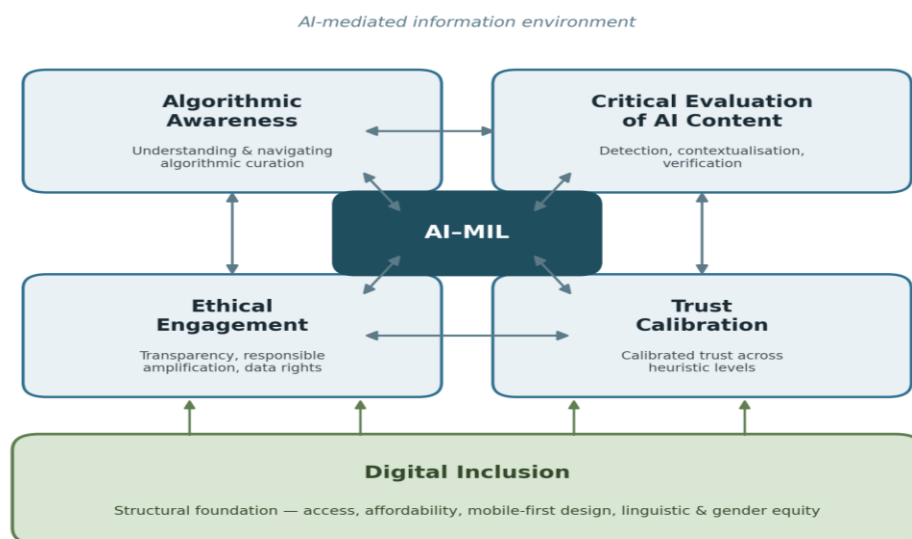


Figure 1: The AI-MIL framework conceptualises media and information literacy as an integrated, non-linear system of competencies for navigating AI-mediated environments. Algorithmic awareness, critical evaluation, trust calibration, and ethical engagement are interdependent, while digital inclusion forms the structural foundation.

Integrated Theoretical Model

These traditions interact rather than merely aggregate. Media dependency theory explains increasing structural reliance on algorithmic systems (Ball-Rokeach & DeFleur, 1976; Sunstein, 2017); trust theory specifies the mechanism by which individuals manage epistemic uncertainty under opacity and overload (Luhmann, 1979; Metzger et al., 2010); and digital-literacy scholarship operationalises these into teachable competencies (Buckingham, 2006; Hobbs, 2010). The result is a layered model in which structural dependence shapes exposure, evaluation processes govern trust, and learned competencies guide behaviour.

Theoretical Propositions

To support empirical application, the relationships among components are articulated as five propositions. P1: Algorithmic Awareness positively influences Critical Evaluation of AI content (Eslami et al., 2015; Swart, 2021). P2: Critical Evaluation enhances Trust Calibration through analytical reasoning and verification (Pennycook & Rand, 2021). P3: Trust Calibration reduces misinformation susceptibility and improves credibility assessment (Metzger et al., 2010; Roozenbeek et al., 2020). P4: Ethical Engagement mediates the relationship between Trust Calibration and responsible information behaviour (Floridi et al., 2018; Hobbs, 2010). P5: Digital Inclusion moderates all relationships by shaping access to tools, literacy resources, and participation (International Telecommunication Union, 2022; Sen, 1999). These propositions provide a foundation for empirical testing across socio-cultural contexts.

Methodology

Research Design

This paper employs a systematic literature review following PRISMA guidelines (Page et al., 2021). The method suits the aim—theoretical synthesis and framework development—which requires transparent, reproducible engagement with existing scholarship rather than primary data collection. The review maps and synthesises literature across four thematic clusters: MIL, AI literacy, trust in digital environments, and digital literacy in African/Global South contexts.

Search Strategy and Databases

Searches were conducted in May–June 2024 across Web of Science, Scopus, JSTOR, Google Scholar, and African Journals OnLine (AJOL), the last included to ensure African representation. Boolean strings combined keyword clusters such as (“media literacy” OR “information literacy”) AND (“artificial intelligence” OR “algorithmic” OR “AI literacy”); (“trust” OR “credibility” OR “misinformation”) AND (“algorithm” OR “social media”); and (“Africa” OR “Kenya” OR “Global South”) AND (“digital literacy” OR “misinformation”). Dates were set to 1970–2024 to capture foundational works while prioritising recent scholarship; results were limited to peer-reviewed articles, scholarly book chapters, and authoritative institutional reports.

Inclusion and Exclusion Criteria

Inclusion criteria were: peer-reviewed articles, scholarly chapters, or authoritative reports; direct relevance to one or more clusters; availability in English; and publication from 1970 onward. Exclusion criteria were: conference abstracts without full text; non-peer-reviewed opinion pieces (except as contextual material); studies addressing technical AI without social or communication dimensions; and duplicates. Figure 2 presents the PRISMA flow diagram.

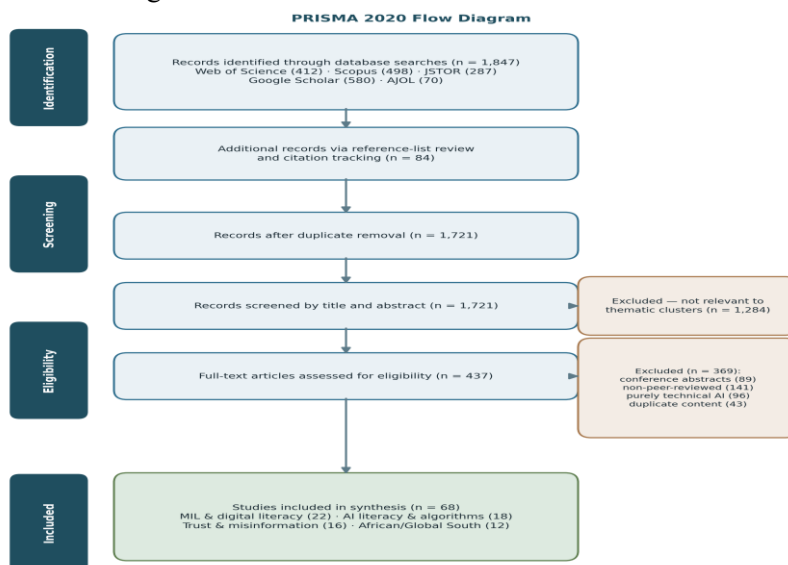


Figure 2: PRISMA 2020 flow diagram for the systematic literature search and selection process (Page et al., 2021). AJOL = African Journals OnLine.

Data Analysis: Thematic Synthesis

Included literature was analysed through thematic synthesis (Thomas & Harden, 2008). A structured template extracted each source's theoretical tradition, core competency claims, identified limitations, and contextual applicability (Global North/South). Extracted data were grouped into preliminary clusters through inductive coding, then developed into the four gap categories and five AI-MIL components through iterative interpretation against the three foundational traditions.

Methodological Rigour and Limitations

To support transparency, the review used structured extraction and iterative coding with repeated cross-checking. Because analysis was conducted by a single researcher, the absence of inter-coder reliability is a limitation, as collaborative coding is recommended for robustness (Page et al., 2021). Systematic reviews are also subject to publication bias (Petticrew & Roberts, 2006). A full list of included studies appears in Appendix A.

Findings

Thematic synthesis of the 68 sources produced four findings, corresponding to the four gap categories and the five-component framework. Findings are reported objectively here; interpretation follows in Section 6.

Algorithmic Opacity as the Primary Structural Gap in MIL

Across the 22 MIL and digital-literacy sources, no framework adequately addresses algorithmic curation as a determinant of citizens' information environments. UNESCO's (2013) framework does not treat "algorithm" as a category, and DigComp 2.2 (Vuorikari et al., 2022) addresses data literacy and content creation but not how recommendation systems shape what citizens encounter. Only 4 of 22 MIL sources (18%) addressed algorithmic curation. Among the 18 AI-literacy sources, all engaged algorithmic systems but with a technical orientation: "understanding how AI works" appeared in 14/18 (78%), while "critically evaluating algorithmically curated information" appeared in only 6/18 (33%). Eslami et al. (2015) found 62% of users unaware their feeds were curated, and Swart (2021) linked algorithmic awareness to more diverse sourcing and lower misinformation susceptibility. Table 2 reports competency emphases across clusters.

Table 2: Competency Emphases Across Reviewed Sources by Thematic Cluster (n = 68)

Competency Dimension	MIL (n=22)	AI Lit. (n=18)	Trust (n=16)	Africa/GS (n=12)
Source/content credibility evaluation	22 (100%)	8 (44%)	14 (88%)	7 (58%)
Algorithmic/AI system awareness	4 (18%)	18 (100%)	11 (69%)	5 (42%)
Trust calibration in AI environments	2 (9%)	3 (17%)	16 (100%)	4 (33%)
Ethical engagement / responsible use	8 (36%)	12 (67%)	7 (44%)	3 (25%)
Digital inclusion / structural access	6 (27%)	2 (11%)	3 (19%)	12 (100%)
AI content detection/verification	1 (5%)	9 (50%)	12 (75%)	2 (17%)

Note. GS = Global South. Percentages represent the proportion of sources within each cluster addressing each dimension; sources may address multiple dimensions.

Trust Calibration is Theoretically Underspecified

Among the 16 trust and misinformation sources, trust calibration—the meta-cognitive capacity to allocate trust appropriately—is recognised as critical but underspecified. All 16 (100%) identified declining institutional trust, and 14 (88%) judged traditional credibility heuristics insufficient in AI-mediated environments, yet only 6 (38%) proposed specific mechanisms for developing calibration in citizens, none integrated into a comprehensive framework. Pennycook and Rand (2021) found analytical thinking reduced misinformation susceptibility, and Roozenbeek et al. (2020) showed “inoculation” improved resistance across 26 countries.

AI Content Detection Competencies Remain Fragmented

Of the 68 sources, 24 (35%) addressed AI content detection or verification, but these were distributed across technical research (12), journalism practice (8), and communication studies (4), with minimal cross-citation. No single framework treated detection as a citizen competency encompassing tools, contextualisation, and verification habits. Chesney and Citron (2019) detailed deepfake-detection challenges; Gehrmann et al. (2019) documented limits of automated text detection; and Vaccari and Chadwick (2020) showed that even poor-quality deepfakes increased uncertainty about authentic video—evidence of synthetic media’s broad corrosive effect.

Global South Contexts are Systematically Marginalised

Only 4 of 22 MIL sources (18%) and 2 of 18 AI-literacy sources (11%) engaged African or Global South contexts. The 12 Africa-focused sources identified factors absent from mainstream frameworks: the dominance of mobile-only access; WhatsApp as a primary, verification-resistant news channel (Wasserman & Madrid-Morales, 2019); linguistic diversity against the English-language dominance of AI systems (Ndemo & Weiss, 2017); and a gender digital divide (International Telecommunication Union, 2022). Recent evidence reinforces these patterns: concern about distinguishing real from fake online content is highest in Africa (73%) and peaks in Nigeria (84%), even as social media serve as primary news sources across demographics (Newman et al., 2025), and African AI-literacy studies document adoption outpacing critical and ethical preparedness (Arkorful et al., 2025; Asghar et al., 2025). Table 3 summarises these factors and their framework implications.

Table 3: African/Global South Contextual Factors and AI-MIL Framework Implications

Contextual factor	Evidence base	AI-MIL implication
Mobile-only internet dominance	ITU (2022); Ndemo & Weiss (2017)	Digital Inclusion must address mobile-first design and data affordability
WhatsApp is the primary news channel.	Wasserman & Madrid-Morales (2019)	Trust Calibration must address closed-network dynamics
AI-amplified health misinformation	Cinelli et al. (2020); Gruzdt & Mai (2020)	Critical Evaluation must include health information verification.
Linguistic diversity vs. AI English dominance	Kwet (2019); Ndemo & Weiss (2017)	Algorithmic Awareness must treat linguistic bias as algorithmic justice
Gender digital divide	ITU (2022); Noble (2018)	Digital Inclusion must address gendered exclusion

High concern, low capacity to verify	Newman et al. (2025)	Trust Calibration pedagogy must build verification habits, not scepticism alone.
Colonial legacies and platform imperialism	Kwet (2019); Wasserman (2011)	Ethical Engagement must encompass governance, advocacy, and digital sovereignty.

Note. AI-MIL = AI-Integrated Media and Information Literacy; GS = Global South; ITU = International Telecommunication Union.

Application Case: Encrypted Messaging in African Contexts

Misinformation circulation on WhatsApp illustrates the framework's relevance. Closed, encrypted networks limit external verification while reinforcing interpersonal trust, so users rely on social proximity rather than institutional credibility (Wasserman & Madrid-Morales, 2019). Here, Critical Evaluation is constrained by the absence of identifiable sources, and Trust Calibration is shaped by community authority rather than formal institutions (Banda, 2009). In Kenya, where mobile-first access and high social-media news use coincide with elevated concern about online falsehood (Newman et al., 2025), the framework directs interventions toward detection literacy, calibrated rather than blind trust in familiar contacts, and responsible sharing—concrete priorities for development communication and curriculum design. Recent evidence from Kenya reinforces this dynamic: users frequently recognise misinformation circulating on WhatsApp yet hesitate to correct it, wary of embarrassing family and friends or assuming it has not spread widely (Mudavadi, Tully, & Lomoywara, 2025).

Discussion

The four findings provide the foundation for the AI-MIL framework. This section interprets them, compares the framework with existing models, and draws out implications.

Component Elaboration and Theoretical Grounding

Algorithmic Awareness addresses Finding 1. That only 18% of MIL sources engaged curation confirms the gap noted by Swart (2021) and van Dijck et al. (2018); the framework advances beyond Resnick et al. (2014) by pairing cognitive understanding with behavioural agency. Trust Calibration addresses Finding 2: its three-level model (calibrated, over-, and under-trust) synthesises Metzger et al. (2010), Luhmann (1979), and Sperber et al. (2010) into an actionable competency, and its African contextualisation—engaging specific trust ecologies rather than assuming Western heuristics—responds directly to Finding 4. Critical Evaluation of AI Content addresses Finding 3 by integrating detection, contextualisation, and verification, while recognising the limits of automated detection (Gehrmann et al., 2019). Ethical Engagement and Digital Inclusion together address the citizenship and equity dimensions neglected by AI-literacy frameworks: the former reorients ethics from designer obligation to citizen responsibility (Hobbs, 2010), and the latter theorises structural access as both precondition and component—the framework's most direct response to Finding 4.

Comparison with Previous Frameworks

Table 4 compares the AI-MIL framework with three prominent models: UNESCO MIL (2013), Hobbs's digital and media literacy (2010), and Long and Magerko's AI literacy (2020).

Table 4: Systematic Comparison: AI-MIL Framework versus Existing Frameworks

Feature	UNESCO MIL (2013)	Hobbs DML (2010)	Long & Magerko (2020)	AI-MIL (This paper)
Algorithmic curation	Absent	Partial	Central	Central, with agency
Trust-calibration model	Implicit	Partial	Absent	Explicit, 3-level
AI content detection	Absent	Absent	Partial	3 sub-competencies
Citizen-centred ethics	Partial	Yes	Design-centred	Yes, 4 dimensions
Digital inclusion as a structure	Access only	Access only	Absent	Access + advocacy + equity
African/Global South grounding	Adaptation urged	Absent	Absent	Embedded in all 5 components

Note. DML = Digital and Media Literacy. “Partial” = addressed but incompletely. AI-MIL = AI-Integrated Media and Information Literacy

Implications for Education

The framework implies cross-curricular integration rather than containment within ICT or media-studies courses: algorithmic awareness, critical evaluation, and trust calibration apply from evaluating AI-generated science homework to identifying amplified political messaging in civics. At the tertiary level, journalism and information-science curricula require systematic engagement with AI tools and ethics (Diakopoulos, 2019), and in Kenyan universities, the framework offers a research-grounded basis for contextually appropriate curriculum innovation. Because educators’ own competencies predict the quality of instruction (Voogt & Roblin, 2012)—and African evidence shows teacher AI readiness lagging adoption (Arkorful et al., 2025; Cross & Feldman, 2025)—professional development in algorithmic awareness and trust calibration is a priority investment.

Implications for Policy and AI Governance

The framework supports mandatory algorithmic-transparency requirements, since citizens cannot develop algorithmic awareness without accessible information about how systems operate. Kenya’s Data Protection Act (2019) and the African Union’s Continental AI Strategy (2024) offer regulatory foundations that the framework can complement, and UNESCO’s (2024) AI competency frameworks supply curricular reference points that AI-MIL extends toward citizenship and the Global South (Miao & Shiohira, 2024). The framework argues that governance should treat media and information literacy as a pillar of AI rights—recognising the right to understand and challenge algorithmic systems as a dimension of democratic citizenship, consistent with the African Union’s (2022) emphasis on meaningful connectivity. Comparative analysis of regulatory responses in Kenya and Senegal likewise cautions that such interventions are most effective when aligned with the perceptions and communicative realities of local stakeholders (Mudavadi et al., 2024).

Limitations

Four limitations apply. As a theoretical review, the paper provides no primary evidence of the framework’s effectiveness, which awaits empirical testing. The review, though PRISMA-guided, is subject to publication bias. The African contextualisation, while grounded in the best available literature, treats a diverse continent as if it were one context; future work should disaggregate national media systems, infrastructures, and

regulatory environments. Finally, the pace of AI development means detection-related competencies will require periodic updating.

Future Research Directions

Five directions are prioritised. First, validation studies should test whether the five components are empirically distinct and predict outcomes such as misinformation susceptibility and source diversity, with survey and experimental work in Kenya, South Africa, Nigeria, and Ghana. Second, intervention studies should compare AI-MIL-informed curricula with traditional MIL, attending to differential effects across subgroups. Third, qualitative research on African trust dynamics should ground contextually responsive Trust Calibration pedagogy. Fourth, applications to health communication should test whether AI-MIL competencies reduce susceptibility to AI-driven health misinformation. Fifth, longitudinal research should track how competency requirements evolve as AI technologies develop.

Conclusion

The integration of AI into global media ecosystems is a transformational challenge for MIL theory, pedagogy, and policy. Based on a systematic review of 68 sources, this paper has argued that traditional MIL frameworks are inadequate for environments characterised by algorithmic curation, generative AI, and synthetic media, and has identified four structural gaps—algorithmic opacity, underspecified trust calibration, fragmented detection competencies, and the marginalisation of Global South contexts.

In response, it proposes the AI-Integrated Media and Information Literacy framework: a five-component ecology—Algorithmic Awareness, Critical Evaluation of AI Content, Trust Calibration, Ethical Engagement, and Digital Inclusion—grounded in trust theory, media dependency theory, and digital-literacy scholarship, and explicitly contextualised for African and Global South environments. As AI systems become more powerful and pervasive, the gap between citizens' competencies and the demands of AI-mediated environments will widen without deliberate educational, policy, and development interventions. The framework is offered as a contribution to closing that gap—so that the transformative power of AI serves, rather than subverts, informed, critical, and ethically engaged information citizenship.

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Appendix A. List of Included Studies in the Systematic Review (N = 68)

Studies are categorised by dominant thematic contribution; some sources contribute to multiple clusters. This appendix is provided as supporting information and may be supplied as a separate file for publication after the references.

No.	Author(s)	Year	Cluster	Region	Key contribution
1	Adorno & Horkheimer	1944	MIL	Global North	Critical theory
2	Freire	1970	MIL	Global	Critical pedagogy
3	Masterman	1985	MIL	Global	Media education
4	Livingstone	2004	MIL	Global	Media literacy theory
5	Buckingham	2006	MIL	Global	Digital literacy
6	Jenkins et al.	2009	MIL	Global	Participatory culture
7	Hobbs	2010	MIL	Global	Competency model
8	UNESCO	2013	MIL	Global	MIL framework
9	Banda	2009	MIL	Africa	Media ethics
10	Wasserman	2011	MIL	Africa	Journalism ethics
11	Olorunnisola & Martin	2013	MIL	Africa	Media influence
12	McChesney	2008	MIL	Global	Political economy
13	Carr	2011	MIL	Global	Cognitive effects
14	Pariser	2011	MIL	Global	Filter bubble
15	Sunstein	2017	MIL	Global	Information fragmentation
16	van Dijck et al.	2018	MIL	Global	Platform society
17	Pasquale	2015	MIL	Global	Algorithmic opacity
18	Gillespie	2014	MIL	Global	Algorithm relevance
19	Diakopoulos	2014	MIL	Global	Accountability
20	Flew	2021	MIL	Global	Platform regulation
21	Noble	2018	MIL	Global	Algorithmic bias
22	Eubanks	2018	MIL	Global	Inequality
23	Long & Magerko	2020	AI	Global	AI literacy
24	Ng et al.	2021	AI	Global	AI literacy framework
25	Selwyn	2019	AI	Global	Critique
26	Jobin et al.	2019	AI	Global	AI ethics
27	Floridi et al.	2018	AI	Global	Ethical AI
28	Diakopoulos	2019	AI	Global	AI journalism
29	Gehrmann et al.	2019	AI	Global	AI text detection
30	Chesney & Citron	2019	AI	Global	Deepfakes
31	Resnick et al.	2014	AI	Global	Algorithmic awareness
32	Eslami et al.	2015	AI	Global	User awareness
33	Swart	2021	AI	Global	Algorithmic agency
34	Amankwah-Amoah et al.	2021	AI	Global	Digital acceleration
35	Kwet	2019	AI	Global South	Digital colonialism
36	Ndemo & Weiss	2017	AI	Africa	Digital Kenya
37	ITU	2022	AI	Global	Digital divide

38	Miao & Shiohira	2024	AI	Global	UNESCO AI (students)
39	Miao & Cukurova	2024	AI	Global	UNESCO AI (teachers)
40	Vuorikari et al.	2022	AI	Global	DigComp 2.2
41	Metzger et al.	2010	Trust	Global	Credibility
42	Luhmann	1979	Trust	Global	Trust theory
43	Sperber et al.	2010	Trust	Global	Epistemic vigilance
44	Pennycook & Rand	2021	Trust	Global	Fake news psychology
45	Roozenbeek et al.	2020	Trust	Global	Inoculation
46	Wardle & Derakhshan	2017	Trust	Global	Information disorder
47	Newman et al.	2025	Trust	Global	Digital news report
48	Edelman	2023	Trust	Global	Trust barometer
49	Bawden & Robinson	2009	Trust	Global	Information overload
50	Vaccari & Chadwick	2020	Trust	Global	Deepfakes & trust
51	Lucassen & Schraagen	2011	Trust	Global	Accuracy & expertise
52	Cinelli et al.	2020	Trust	Global	Infodemic
53	Gruzd & Mai	2020	Trust	Global	Conspiracy spread
54	Schick	2020	Trust	Global	Infocalypse
55	World Economic Forum	2025	Trust	Global	Global risks
56	Thomas & Harden	2008	Method	Global	Thematic synthesis
57	Wasserman & Madrid-Morales	2019	Africa	Africa	Fake news & trust
58	Asghar et al.	2025	Africa	Africa	AI literacy (West Africa)
59	Arkorful et al.	2025	Africa	Africa	Teacher AI literacy
60	Cross & Feldman	2025	Africa	Africa	AI in SA schooling
61	Ndungu	2024	Africa	Africa	AI literacy in MIL
62	Noble	2018	Africa	Global	Algorithmic bias
63	Sen	1999	Africa	Global	Capability approach
64	Nussbaum	2011	Africa	Global	Capabilities
65	Olorunnisola & Martin	2013	Africa	Africa	Media influence
66	African Union	2022	Africa	Africa	Internet governance
67	African Union	2024	Africa	Africa	Continental AI strategy
68	Petticrew & Roberts	2006	Method	Global	Systematic reviews

Note. Studies are categorised by dominant thematic contribution; MIL = Media and Information Literacy; ITU = International Telecommunication Union; SA = South Africa.