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Beyond skepticism: Question marks surrounding AI and AIED policies in Africa

Lucy Michael Nyagoga [a,*], Evance Joseph Mapunda [b,c], Mariana Julius Shirima [a,d], Jecha S. Jecha [a,e], Michael W. Nicodemus [f,g], Michael Agyemang Adarkwah [h,**]

[a] School of Educational Technology, Faculty of Education, Southwest University, Chongqing, China
[b] School of Curriculum and Instruction, Faculty of Education, Southwest University, China
[c] Department of Educational Psychology and Curriculum Studies, School of Education, University of Dar es Salaam, Tanzania
[d] Department of Educational Psychology and Curriculum Studies, Faculty of Education, Mkwawa University College of Education, Tanzania
[e] Department of Education, Faculty of Science, Zanzibar University, Kibele, Zanzibar, Tanzania
[f] School of Education Leadership and Management, Faculty of Education, Southwest University, China
[g] Department of Education and Teaching, Faculty of Social Sciences, Mzumbe University, Morogoro, Tanzania
[h] Institute for Education and Culture, Chair of Adult Education, Friedrich Schiller University Jena, Am Planetarium 4, 07743, Jena, Germany

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ABSTRACT

Since the emergence of artificial intelligence (AI) tools, global interest in AI and artificial intelligence in education (AIED) policies as solutions to AI-related challenges has grown substantially. However, African AI and AIED policies face skepticism due to ongoing developmental challenges, such as infrastructure gaps, underfunded educational systems, and limited institutional readiness for AI adoption. This study conducts a qualitative document analysis of AI and AIED policies from ten purposively selected African countries across four regions: Benin, Ghana, and Nigeria (West Africa); Kenya, Rwanda, and Tanzania (East Africa); Egypt (North Africa); and Mauritius, South Africa, and Zambia (Southern Africa). Using the OECD (2017) analytical framework as a guide, we evaluate three dimensions crucial to policy practicability: (1) smart design (justification, goals, feasibility), (2) stakeholder engagement (actor identification and relational dynamics), and (3) conducive context (institutional mechanisms and policy complementarities). The findings reveal that the policies are conceptually sound. However, implementation prerequisites are often underspecified, particularly regarding explicit budgets and implementation timelines. Stakeholder engagement and contextual mechanisms vary significantly, ranging from state-led to collaborative stakeholder relationships and from actionable to declarative institutional mechanisms. Although policy complementarities with national development agendas and institutional policies are evident, regulatory inconsistencies persist. Overall, these findings highlight the gap between the ambition and practicability of African countries' AI and AIED policies, necessitating the evidence-based interventions discussed herein.

1. Introduction

Digital technologies have progressively reshaped educational landscapes worldwide over the past several decades, and more recently, artificial intelligence (AI) has emerged as a transformative force. While AI technologies, including machine learning, deep learning, and natural language processing, have been developed and applied in various sectors for years [1], the release of generative AI tools such as ChatGPT in late 2022 has accelerated public and scholarly interest in AI across multiple fields [2,3], including education [4]. AI has thus become both a significant and contentious force in global educational systems. Filgueiras [5] and Falebita and Kok [6] contend that AI technologies can significantly reduce global learning disparities, particularly in large classes and underfunded educational settings. AI technologies in

* Corresponding authors at: Faculty of Education, School of Educational Technology, Southwest University, 400715 Chongqing, China.
** Corresponding authors at: Institute for Education and Culture, Chair of Adult Education, Friedrich Schiller University Jena, Am Planetarium 4, 07743, Jena, Germany.
E-mail addresses: lucynyagoga@gmail.com (L.M. Nyagoga), mapunda.evance@udsm.ac.tz (E.J. Mapunda), mariana.shirima@muce.ac.tz (M.J. Shirima), jecha@zanvarsity.ac.tz (J.S. Jecha), michael.nicodemus@mu.ac.tz (M.W. Nicodemus), michael.agyemang.adarkwah@uni-jena.de (M.A. Adarkwah).

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education facilitate personalized learning experiences for students, enhance feedback mechanisms, and alleviate administrative burdens for educators [7,8]. This trend has prompted the global advancement of AI and artificial intelligence in education (AIED) policies [9–11].

While these global developments signal optimism about AI's educational potential, the realities in many regions, particularly in Africa, present a starkly different picture. In the African context, AI and AIED policies face considerable skepticism, primarily attributable to three persistent developmental challenges: inadequate digital infrastructure that limits access to advanced technologies, including AI [12], with only one-third of Africans having internet access by 2023 ([13]; ITU, [14]); insufficient funding for educational systems and other sectors [15] that restricts the capacity for technology integration; and a notable scarcity of institutional preparedness for AI, with only a limited number of African countries having developed AI regulatory frameworks by 2024 [16,17]. These challenges (i.e., infrastructure gaps, funding constraints, and deficits in institutional AI readiness) render skepticism regarding AI and AIED policies not only understandable but analytically productive, as rigorous scrutiny of policy design is essential when implementation conditions are constrained.

However, skepticism and promise can coexist, not necessarily in an oppositional manner. Skepticism serves as a productive lens for policy analysis when it drives empirical examination rather than categorical dismissal. From early 2023 onward, paralleling the broader global surge in AI governance [10], AI policy development has accelerated significantly across the African continent [18,16,19,17]. This acceleration positions Africa at a critical inflection point that demands systematic, evidence-informed analysis guided by, rather than dismissive of, the very skepticism these conditions generate. Chisom et al. [9] and Prateek and Bhanu [20] characterize AI policy development in Africa as being in its infancy yet full of potential. Although only a few African countries have established formal AI policies, and even fewer have developed policies specific to education, progress is evident. Moors [18], Okolo [16], Sulaiman et al. [19], and Zenda [17] indicate that by mid to late 2024, approximately 8–12 African countries had released national AI or AIED policies, most of which remain in initial implementation phases, while 31 others had established regulatory frameworks. This rapid acceleration means that the current moment, before policies become institutionally entrenched, represents a productive window for evidence-based assessment that can inform course corrections.

From a research perspective, evidence-based assessment is necessary to understand AI and AIED policy development in Africa rather than relying on assumptions. According to Adarkwah et al. [21], African institutions have historically been labeled "laggards" and "late adopters" of innovative digital technologies, such as AI. This characterization aligns with insights from the World Economic Forum on AI, which identified AI divide between the Global North and Global South, with the economic and social benefits of AI remaining geographically concentrated in the Global North [22]. The forum recommended that developing countries, including those in Africa, implement policies to safeguard AI and ensure its benefits while addressing associated risks. However, the scarcity of studies that comprehensively capture governmental legislative efforts to regulate AI in Africa limits the understanding of the AI adoption process. As Gwagwa et al. [23] emphasize, enlightened policymaking within Africa is essential for the region to build inclusive AI ecosystems.

Global AI governance frameworks stress the importance of AI policies in promoting equity and mitigating associated risks. For instance, the EU AI Act and UNESCO's Beijing Consensus emphasize human-centered oversight, fairness, and risk management [10,11]. African initiatives align with these frameworks at the continental level by promoting inclusion, innovation, and capacity building, as evidenced by the African Union's Continental AI Strategy [24] and Smart Africa's blueprints [24–27]. At the national level, exemplary policies include Nigeria's 2024 AI Strategy and Rwanda's Vision 2050 framework, which emphasize transparency and mitigation strategies in addressing AI-associated issues, such as procurement processes, data governance structures, and workforce development requirements [28,29].

Governmental efforts to release AI policies from early 2023 are commendable [9,18,16,19,17]; however, African nations must move beyond policy formulation to effective implementation. Without this transition, AI policies risk remaining aspirational documents rather than actionable regulatory frameworks, thereby entrenching the continent's existing AI gaps in foundational and energy infrastructure, talent development, and regulatory capacity [30]. This stagnation would widen the disparity with regions such as the European Union, which has already advanced >50 AI policy initiatives by 2023 [31]. To address these gaps, AI policies must be contextual, reflecting the cultural values, beliefs, and ethical norms of the African continent [32].

Despite these initiatives at the global, continental, and national levels, uncertainty persists regarding the adequacy and readiness of African countries to implement AI and AIED policies [33–35]. What is at stake is significant. Failure to develop and implement effective AI policies could further entrench Africa's characterization as a 'late adopter' of AI technologies [21], deepen the Global North–South AI divide documented by the World Economic Forum [22], and foreclose opportunities for AI-driven improvements in education, healthcare, and economic productivity. These risks compound as African nations are committing during a critical implementation window projected for 2026–2027. Two critical questions remain unanswered: First, do African AI and AIED policies offer clear, evidence-based rationales for AI implementation that address context-specific issues, rather than merely mirroring global policy frameworks? Continental AI frameworks, such as the Smart Africa Blueprint [26] and the 2024 Continental Artificial Intelligence Strategy, advocate for AI adoption. However, there is insufficient evidence to validate the efficacy of these frameworks beyond aspirational positioning. Second, what are the implementation requirements outlined in these policies, such as resource specifications, institutional mechanisms, and stakeholder coordination structures?

Existing studies provide partial answers by documenting the development of AI policies in the African context [36,9,37,16] and emphasizing synergies between African AI policies and global frameworks [38,39]. However, three interrelated but analytically distinct gaps persist. First, although existing studies conceptually examine multiple dimensions of AI governance challenges on a global scale, including infrastructure deficits, organizational practices, and accountability concerns (e.g., [40,41]), they do not assess whether these policies achieve internal coherence, including logical consistency between stated objectives, regulatory mechanisms, and enforcement provisions, or establish clear enforceability through explicit accountability structures. Therefore, it remains unclear whether policies function as logically coherent governance instruments or aspirational documents, a question of regulatory design that precedes and is distinct from the implementation readiness question addressed in the second gap.

Second, practically, while scholars acknowledge meaningful progress in AI and AIED policy development across African nations (e.g., [42,9]), none have examined the specific implementation prerequisites that determine whether policies can transition from formulation to practice. Critical operational elements, including budget specifications, phased implementation timelines, responsible institutional actors, and stakeholder coordination structures, remain underexplored in analyses of African AI governance, as Alanoca et al. [43] noted. This study fills this gap by analyzing the presence and specificity of implementation requirements within policy documents and assessing whether policies provide actionable guidance for resource allocation, timeline management, and institutional coordination.

Third, contextually, Africa's distinctive governance, characterized by multi-layered institutional structures, resource constraints that shape regulatory capacity, and diverse cultural contexts that influence policy

legitimacy, creates implementation challenges that differ qualitatively from those documented in Global North settings. Context-specific research (e.g., [44–46]) has identified governance failures such as stakeholder marginalization, regulatory fragmentation, and tensions between policy justifications and practical realities in non-African settings. However, these studies rarely examine whether African AI and AIED policies explicitly incorporate provisions to address these documented challenges, as they manifest within the African context. This oversight leaves it unclear whether African policymakers have learned not only from global implementation experiences but also from their own realities, or whether policies risk repeating known pitfalls. This study addresses this gap by analyzing whether African policy documents contain explicit mechanisms to prevent stakeholder exclusion, ensure regulatory integration across institutional levels, and align policy justifications with context-specific conditions. By addressing these three interrelated gaps, this study positions skepticism as a productive analytical lens, applying the adapted OECD [47] framework to systematically assess whether African AI and AIED policies function as operational governance instruments or remain as aspirational documents.

This study addresses the aforementioned gaps through document analysis of AI and AIED policies in 10 African countries across four regional zones: Benin, Ghana, and Nigeria (West Africa); Kenya, Rwanda, and Tanzania (East Africa); Egypt (North Africa); and Mauritius, South Africa, and Zambia (Southern Africa). The analysis is guided by three adapted dimensions from the OECD [47] framework: (1) smart design, which includes policy goals and visions, feasibility, and justification for AI and AIED policies; (2) stakeholder engagement, which involves identifying key stakeholders and mapping their relationships; and (3) contextual settings, which focus on institutional mechanisms and policy complementarities relevant to the African context. This framework enables evaluation of whether African AI and AIED policies progress beyond aspirational declarations to actionable practice, thereby channeling skepticism into evidence-based policy assessment rather than relying on rhetorical commitments alone.

In doing so, this study offers stakeholders, including policymakers, educational institutions, and other relevant actors, insights into both the strengths and implementation gaps in African AI and AIED policies. The study makes several contributions to the emerging literature on AI governance in Africa, as detailed in Section 4.2. Specifically, this study is the first to conduct a cross-regional analysis of African AI and AIED policies that employs a systematic adaptation of the OECD [47] framework, thereby pioneering a structured evaluative approach to AI governance across the continent and providing timely evidence during the critical window before policy commitments become institutionally entrenched. By bridging the analytical space between aspirational policy rhetoric and operational prerequisites, this study offers policymakers, educational institutions, and development partners an evidence base for targeted policy refinement rather than wholesale policy redesign. In the context of this study, a policy is defined as "the implicit or explicit specification of courses of purposive action being followed, or to be followed in dealing with a recognized problem or matter of concern and directed towards the accomplishment of some intended or desired set of goals" ([48], p. 13). As Ulnicane et al. [49] note, AI policies reveal the rhetorical framework of AI governance.

Research questions

1. How do African AI and AIED policies demonstrate smart design (e.g., justification, goals, and feasibility)?
   a. Are the policies clearly justified?
   b. Are the policy goals/visions clearly stated?
   c. Can policies be realistically implemented, given the existing technical and fiscal resources?
2. Which key stakeholders are identified in African AI and AIED policies, and how do the relationships among them shape implementation?
   a. Who are the key stakeholders identified in these policies?
   b. What are the formal and informal relationships between the identified stakeholders, and how do they shape implementation?
3. In what ways do African AI and AIED policies account for a conducive context (e.g., institutional settings and policy complementarities)?
   a. What institutional mechanisms are stated to support policy implementation?
   b. Do other existing policies complement or contradict one another? If so, how?

2. Methodology

2.1. Research design & data collection

This study employed qualitative document analysis, a methodology that provides interpretive depth [50,51] by determining and articulating patterns, assumptions, and implicit meanings inherent in textual data [52], which quantitative metrics alone cannot reveal. Quantitative methods, such as surveys or statistical content frequency counts, were not suited to this study's objectives, which required an interpretive examination of how policies frame, justify, and operationalize AI governance rather than a measurement of predefined variables [52]. This methodological approach was selected over alternative qualitative methods, such as stakeholder interviews, for two primary reasons. First, policy documents capture the formal positions of governments and regulatory bodies, whereas interviews can yield personal opinions or responses that diverge from what is formally codified. Document analysis thus enabled the examination of authorized documents rather than individual interpretations, minimizing social desirability effects. This distinction was essential for understanding how policies formally frame AI and AIED within the African context.

Second, document analysis provided unmediated access to the official texts that shape institutional practice and public understanding of AI, enabling engagement with documents from ten countries in ways that interview-based methods, constrained by scheduling, access, and cross-national coordination, could not be feasibly achieved at this scale. Nevertheless, this methodological choice inherently constrains findings to formally documented policy positions; it cannot capture actual implementation processes, stakeholder experiences, or the informal negotiations that shape policy enactment in practice, a limitation detailed in Section 4.4.

Regarding data collection, this study employed archival research to examine publicly accessible AI and AIED policy documents. Purposive sampling was selected over random sampling because the total population of African countries with publicly available AI or AIED policies is inherently limited; random sampling from this restricted population would neither increase representativeness nor ensure inclusion of the most information-rich cases [52]. This strategy enabled the systematic identification of countries that met transparent, research-aligned inclusion criteria, thereby maximizing the analytical relevance of the sample to the study's objectives. Although this approach is limited in generalizability because of its small sample size [52], it offers valuable insights applicable to similar contexts. Ten African countries with publicly available AI or AIED policies in English were selected based on the following primary inclusion criteria: (a) official policies (national strategies, frameworks, or guidelines) explicitly addressing AI or AIED; (b) published in English; and (c) publicly accessible. These criteria were driven by practical considerations of analytical consistency and data availability rather than predetermined representational targets. Restricting the sample to English-language documents, while it constitutes a methodological limitation by excluding Francophone and Lusophone nations whose distinct colonial institutional legacies could shape AI governance differently, ensured linguistic consistency throughout the analysis, thereby avoiding the interpretive complications that arise from translation or cross-linguistic comparison.

The resulting sample constitutes the most comprehensive cross-regional dataset of African AI and AIED policies assembled for systematic analysis to date. These ten countries span four major African regions [24]: West Africa (Benin, Ghana, and Nigeria), East Africa (Kenya, Rwanda, and Tanzania), North Africa (Egypt), and Southern Africa (Mauritius, South Africa, and Zambia). This regional breadth captures significant variations in governance traditions and AI ecosystem maturity. The countries further exhibit varying levels of policy maturity, ranging from Kenya's 2025 to Egypt's pre-2020 policies, alongside socioeconomic diversity, for instance, middle-income South Africa compared to low-income Zambia. While this diversity was not a criterion for inclusion, it provides analytical breadth that exceeds that of any prior study of African AI policies, which have examined individual countries or single regions. However, findings should be understood as illustrative of patterns within available Anglophone African AI policies rather than representative of continental AI governance approaches.

Data collection followed a three-phase approach, drawing upon secondary sources to identify and retrieve African AI and AIED policy documents. In the first phase, secondary sources documenting AI regulatory initiatives across Africa were identified through searches of academic databases and repositories, including Google Scholar, using a combination of keywords such as "AI," "artificial intelligence," "AIED," "artificial intelligence in education," "policy," and "Africa." This initial search yielded scholarly works, including Okolo [16], who referenced 36 African countries with documented AI regulatory initiatives (Table 1). In the second phase, a manual review of these secondary sources (including academic literature, governmental policy portals, and organizational reports) was conducted to identify policy documents, confirming the existence of 19 countries with documented AI and AIED policies (Table 1). In the third phase, additional manual verification was performed to identify and retrieve specific English-language policy documents. Of the 19 identified countries, only 10 had publicly accessible official policy texts that met the inclusion criteria, forming the final sample (Table 2). This secondary-source-driven identification process mitigated researcher selection bias, as the initial pool of countries was determined by prior scholarly documentation (e.g., [16]) rather than the authors' subjective judgment, and the final sample was determined solely by the predefined inclusion criteria. Data collection took place between February 24 and 27, 2025. Given the rapidly evolving nature of AI governance across Africa, these documents represent a temporal snapshot; policies could have been updated, superseded, or newly introduced after this collection period.

2.2. Analytical framework

This study used the OECD [47] framework for implementing education policy as an analytical tool. This framework provides an international benchmark for analyzing educational and technological policies and recognizes technology as a fundamental resource in policymaking, rendering it appropriate for the current analysis. Specifically, the framework synthesizes literature and examples from various countries to elucidate policy implementation in complex educational systems, addressing two fundamental questions: (1) what policy implementation involves in both theory and practice?, and (2) which factors influence implementation processes? (Fig. 1). The OECD [47] framework was selected over other options, such as UNESCO's AI Ethics Framework [59] and the UNESCO Recommendation on the Ethics of AI [11], for three reasons.

First, the OECD [47] framework explicitly considers policy design, stakeholder dynamics, and contextual alignment, which are crucial for evaluating the feasibility of education policies, including those related to AI and AIED. While UNESCO [59] primarily focuses on ethical deployment principles rather than the mechanics of implementation, the OECD [47] framework provides actionable analytical layers specifically tailored to educational policy. Second, UNESCO [11] presents 11 ethical principles for AI governance, such as proportionality, safety, and

Table 1
Explicitly documented AI and AIED policies ($n = 19$).

Country	Region	Secondary Sources Documenting AI and AIED Policies	Status	Reason for Exclusion
Benin	Western Africa	Okolo [16]	Included	—
Egypt	Northern Africa	Sulaiman et al. [19], Adams [36], Moors [18], Namunwa [53], and Okolo [16]	Included	—
Ghana	Western Africa	Tsanni [54], Namunwa [53] and Okolo [16]	Included	—
Kenya	Eastern Africa	Sulaiman et al. [19], Tsanni [54], Moors [18] and Namunwa [53]	Included	—
Mauritius	Southern Africa	Sulaiman et al. [19], Adams [36], Moors [18], Namunwa [53] and Okolo [16]	Included	—
Nigeria	Western Africa	Sulaiman et al. [19], Tsanni [54], Theodorio et al. [55], Bali et al. [56], and Namunwa [53]	Included	—
Rwanda	Eastern Africa	Theodorio et al. [55], Adams [36], Moors [18] and Okolo [16]	Included	—
South Africa	Southern Africa	Sulaiman et al. [19], Zenda [17], Tsanni [54], Aina & Adekomaya [57], Moors [18] and Namunwa [53]	Included	—
Tanzania	Eastern Africa	Tsanni [54], Mambile & Mwogosi [58] and Namunwa [53]	Included	—
Zambia	Southern Africa	Okolo [16]	Included	—
Ethiopia	Eastern Africa	Zenda [17] and Moors [18]	Excluded	Policy document was not publicly accessible
Morocco	Northern Africa	Sulaiman et al. [19], Zenda [17] and Namunwa [53]	Excluded	Policy document not publicly accessible
Tunisia	Northern Africa	Moors [18], Namunwa [53] and Okolo [16]	Excluded	Policy document not publicly accessible in English
Senegal	Western Africa	Okolo [16]	Excluded	Policy document not publicly accessible in English
Sierra Leone	Western Africa	Okolo [16]	Excluded	Policy document not publicly accessible in English
Lesotho	Southern Africa	Theodorio et al. [55]	Excluded	Policy document was not publicly accessible
Uganda	Eastern Africa	Namunwa [53]	Excluded	Policy document was not publicly accessible
Zimbabwe	Southern Africa	Namunwa [53]	Excluded	Policy document was not publicly accessible
Cameroon	Western Africa	Namunwa [53]	Excluded	Policy document not

(continued on next page)

Table 1 (*continued*)

Country	Region	Secondary Sources Documenting AI and AIED Policies	Status	Reason for Exclusion
				publicly accessible in English

Table 2
Included AI and AIED policies ($n = 10$).

Country	Retrieved AI & AIED Policy Document
Benin	National Artificial Intelligence and Big Data strategy 2023–2027
Egypt	Egypt National Artificial Intelligence Strategy
Ghana	Republic of Ghana National Artificial Intelligence Strategy 2023–2033
Kenya	Kenya Artificial Intelligence Strategy 2025–2030 & Guideline for GenAI in higher education at Aga Khan University (AKU)
Mauritius	Mauritius Artificial Intelligence Strategy
Nigeria	National Artificial Intelligence strategy (NAIS), Policy of the Adoption of AI in National Open University of Nigeria (NOUN) & Policy on AI in University of Benin
Rwanda	The National AI Policy
South Africa	South Africa National Artificial Intelligence Policy Framework
Tanzania	National Guidelines for Artificial Intelligence in Education
Zambia	National Artificial Intelligence Strategy 2024–2026

fairness, which emphasize normative human-centered guidelines but do not offer explicit mechanisms for analyzing policy implementation. Third, the OECD [47] framework is directed at the practical determinants affecting implementation processes, making it particularly valuable for analyzing African AI and AIED policies in contexts marked by developmental constraints [20].

To the authors' knowledge, this is the first systematic application of the OECD [47] implementation framework to African AI and AIED policies. The tailoring of its dimensions, retaining smart design, stakeholder engagement, and conducive context while excluding the fourth dimension of coherent implementation strategy to reflect the scope of document-based analysis, accounts for Africa's distinctive governance challenges, including resource constraints, multi-level stakeholder ecosystems, and the tension between national sovereignty and international development partnerships. This adapted framework offers a replicable analytical approach for future policy research on AI governance across the continent and beyond.

The original OECD [47] framework consists of four dimensions: (1) smart policy design, (2) inclusive stakeholder engagement, (3) conducive context, and (4) a coherent implementation strategy. The adaptation retains three of these dimensions, excluding the fourth, as detailed below and shown in Fig. 1. The omitted fourth dimension, "coherent implementation strategy," pertains to operational processes such as monitoring systems, feedback loops, and adaptive management during implementation. However, the study analyzes the documented implementation prerequisites within dimension 3 (contextual settings), focusing on institutional mechanisms and policy complementarities, as outlined in policy texts. This distinction is crucial: the analysis examines what policies prescribe as implementation support (e.g., "establish National AI Council") rather than assessing the practical effectiveness of that support. Evaluating operational implementation requires longitudinal field research, which is beyond the scope of this study. Consequently, readers should interpret the findings as assessments of policy design prerequisites rather than evaluations of implementation effectiveness, a distinction maintained throughout the results and further addressed in Section 4.4. The conceptual lens of "beyond skepticism" explores how policies address or overlook typical implementation critiques through explicit design choices, thereby framing skepticism as a tool for actionable policy refinement rather than an obstacle to innovation.

The first dimension, "*smart policy design*," evaluates the policy attributes essential for the practicability of AI and AIED policies, thereby addressing Research Question 1. This dimension consists of three components: (a) justification, which involves clarity in problem definition and an evidence-based rationale; (b) goals, which pertain to explicit objectives and internal coherence; and (c) feasibility, which covers alignment with available technical and fiscal resources. According to OECD ([47], pp. 28–30), these elements are fundamental for effective policy enactment: "A well-designed policy is the bedrock of successful implementation. It must be justified, have coherent goals and a logical theory of change, and be feasible within practical realities" (p. 30). This study retains these core elements, enabling the assessment of whether AI and AIED policies offer logical justifications and contextually feasible solutions, particularly in African settings.

The second dimension, "*stakeholder engagement*," adapted from the OECD [47] dimension of "*inclusive stakeholder engagement*," identifies the main actors and relationship dynamics that affect the implementation of AI and AIED policies, thereby answering Research Question 2. As OECD ([47], p. 30) notes, stakeholders play a pivotal role in implementation processes: “Policies are enacted through actors with agency who can facilitate or hinder implementation.” 30). In the original framework, OECD ([47], pp. 30–33) places stakeholders at the core because their agency shapes implementation outcomes by (1) identifying diverse actors across system levels and (2) examining relationship dynamics that

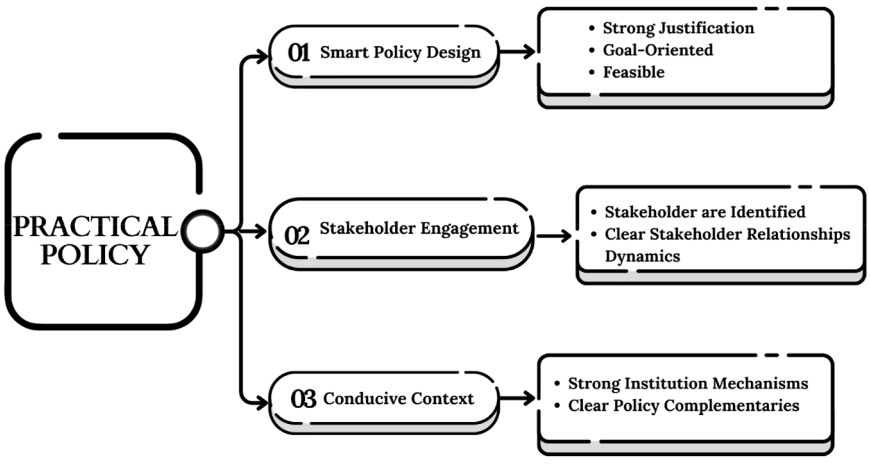

Fig. 1. The adapted analytical framework.
Source: This analytical framework was adapted from OECD [47].

include formal and informal interactions, power imbalances, and motivational structures. This study focuses on two components: (a) identifying key actors (governments, civil society, unions, NGOs, international partners; OECD, [47], pp. 30–32) and (b) relationship dynamics (consultative mechanisms, power asymmetries, collaborative structures). Components such as stakeholder capacity and belief systems were excluded because the study focused on policy document content rather than operational stakeholder behavior. This adaptation investigates whether policies explicitly acknowledge Africa's complex stakeholder ecosystems, particularly the power imbalances between ministries, local communities, and international development partners that shape AI governance.

The third dimension, "*conducive context*," adapted from OECD [47], evaluates the contextual supports outlined in AI and AIED policies, addressing Research Question 3. According to OECD ([47], pp. 34–37), this dimension encompasses elements that shape implementation environments, such as (1) institutional settings, which include formal governance structures, informal norms, and decision-making hierarchies, and (2) policy complementarities, which ensure cross-sectoral compatibility to maintain consistency and avoid contradictions. The study concentrates on two components while excluding societal trends and external shocks: (a) institutional mechanisms documented in policies, such as governance structures, coordination bodies, and collaborative norms, and (b) policy complementarities, which involve alignment or contradictions with other policy frameworks, including national development plans or institutional policies.

2.3. Data analysis

This study employs an iterative thematic analysis process, adapted from Braun and Clarke [50] and complemented by Miles et al. [60], to critically examine the AI and AIED policy documents. This method is well-established for qualitative document analysis, requiring immersion, coding, and comparative synthesis to uncover contextual patterns and underlying meanings [50,60]. The analysis began with an immersive reading of all policy documents. This familiarization phase enabled the researchers to develop an initial comprehension of each document's content and discern preliminary overarching themes. Immersion ensured contextual grounding [50] and facilitated a holistic understanding of each policy's hints, implicit assumptions, and rhetorical strategies before its deconstruction. Iterative reading prevented premature pattern identification, thereby reducing the risk of misinterpreting aspirational statements as operational provisions.

Following initial coding, a deductive-inductive hybrid approach was employed during the theme review [50,61,62]. This method balanced the predefined deductive themes from the framework with emergent inductive themes drawn from the data. Deductive coding utilized a priori dimensions and components from the OECD [47]; for instance, under smart design, subcodes addressed goal clarity, justification quality, and resource feasibility. Inductive coding allowed context-specific themes to emerge naturally from the content of the policy documents. The full sample, consisting of 10 AI and AIED policies from Benin, Egypt, Rwanda, Kenya, Ghana, Mauritius, Nigeria, South Africa, Tanzania, and Zambia, was used to develop the initial codes using the deductive-inductive hybrid approach. These codes were crafted to align the findings with the dimensions and corresponding research questions of the OECD [47] framework.

The study opted for manual qualitative coding over software-assisted analysis (e.g., NVivo, ATLAS.ti) for two reasons. First, the dataset comprising 10 policy documents was sufficiently small to be analyzed manually without encountering the data management challenges that software typically addresses in larger datasets. Second, manual coding allowed for flexible, iterative engagement with the texts during the initial familiarization stages, facilitating the identification of emergent themes alongside deductive coding. To enhance coding consistency across the multi-researcher team, the researchers developed rating rubrics with specified criteria and observable indicators at multiple rating levels for each analytical dimension (see Appendices A–C).

These rubrics provided shared anchor examples that guided coding decisions across all three rating levels; for instance, distinguishing a "strong" justification supported by empirical evidence from a "moderate" justification grounded in conceptual reasoning but lacking context-specific data. For example, in addressing RQ1, Ghana's policy was rated ' strong ' on justification (Appendix A1) because most themes were explicitly justified with direct policy evidence, whereas Mauritius was rated ' moderate/partial ' because explicit justifications were limited to workforce shortages and declining competitiveness. On goal orientation (Appendix A2), Rwanda received a ' strong ' rating for its five-year phased plan with annual activity schedules, whereas South Africa was rated ' conditional ' for lacking a documented timeline or measurable targets. On feasibility (Appendix A3), Rwanda was rated ' moderate/partial ' for including budgetary frameworks and institutional responsibility assignments, whereas Nigeria was rated ' conditional ' because its feasibility depended on securing public–private funding without documented mitigation strategies. This rubric-guided approach strengthened the transparency and replicability of coding decisions. However, given the interpretive nature of qualitative policy analysis, coders at times exercised judgment in applying rubric criteria to nuanced or ambiguous policy language, particularly where documents contained aspirational statements that could plausibly fall between rating levels.

This interpretive dimension, while inherent to qualitative methodology, introduces a degree of subjectivity that readers should consider when evaluating the findings. For example, Nigeria's policy acknowledged its funding shortfall as a high-probability risk, prompting coders to deliberate between a 'Moderate/Partial' and 'Conditional' feasibility rating (see Appendix A3). Through team discussion and rubric reconsultation, the provision was coded as 'Conditional' because the policy did not document specific mitigation strategies or resource mobilization timelines. Similarly, Kenya's policy complementarity was initially coded as 'Conflicts Exist' but was reclassified through team deliberation as 'Partial Alignment' (see Appendix C2), as the tensions between the AI Strategy and the ICT Authority Bill of 2024 represented alignment gaps rather than outright contradictions.

Drawing on this approach, three researchers independently coded all ten documents. A fourth researcher coded the full set of documents to assess inter-rater reliability. Simple percent agreement across all codes reached 85.7 %, which exceeded the commonly accepted threshold of 80 % for qualitative research [60]. Simple percent agreement was calculated as the proportion of coding decisions on which the fourth researcher's independent ratings matched the consensus ratings of the original three-researcher team, computed across all seven analytical dimensions (Appendices A1, A2, A3, B1, B2, C1, and C2) and all ten policy documents, amounting to 70 independent decisions. For each of the 70 decisions, the fourth researcher's independent rating was compared with the three-researcher consensus rating and scored as 1 (match) or 0 (no match). The agreement rate was then calculated as the number of matches divided by the total number of coding decisions, multiplied by 100. However, simple percent agreement does not account for chance agreement, and the study did not employ conservative measures, such as Cohen's kappa, a methodological limitation highlighted in Section 4.4. Rather than treating discrepancies between raters as errors, the team used them as opportunities for collaborative discussion, refining code definitions, and clarifying boundaries between categories. This iterative process enhanced the precision and consistency of the final codebook. This method aligns with best practices for analyzing small, text-dense datasets [60].

After generating themes, the findings were synthesized across countries and policies using a comparative matrix approach [60]. This matrix facilitated cross-country comparisons by aligning the identified themes with the framework dimensions and research questions. Specifically, the matrix was organized with countries listed as rows and the

Table 3a
African AI and AIED policies justification by country and theme.

Country	Theme 1: Skilled AI Workforce Shortage	Theme 2: Infrastructure Deficits	Theme 3: Equity Concerns	Theme 4: Governance Deficits	Theme 5: Economic/Competitive Positioning
Benin	Explicit: "insufficient resources trained in AI" ([63], p. 19)	Explicit: "institutional support is not enough for AI research and startups" ([63], p. 19)	Implicit: noted through access-oriented interventions	Explicit: "ethical and liability issues related to AI are not addressed by the legal framework"; "lack of a framework for big data" ([63], p. 19)	Implicit: theme identified during analysis but no specific textual evidence extracted
Egypt	Implicit: theme identified during analysis but no specific textual evidence extracted	Explicit: "inadequate research infrastructure and data availability and quality as critical problems" ([65], p. 19)	Implicit: noted through access-oriented interventions	Implicit: theme identified during analysis but no specific textual evidence extracted	Implicit: theme identified during analysis but no specific textual evidence extracted
Ghana	Explicit: "limited availability of university professors, funding, and courses in AI" ([64], p. 17)	Explicit: poor coordination among AI ecosystem actors, including academia, industry, and government [64]	Explicit: directly addressed in policy	Explicit: "low awareness, compliance, and enforcement of data privacy and cybersecurity policies" ([64], p. 17); "public skepticism" ([64], p. 17)	Implicit: theme identified during analysis but no specific textual evidence extracted
Kenya	Explicit: "economic and labor market disruption and job losses" ([66], p. 20)	Explicit: country could become "a consumer rather than a producer of AI technologies" ([66], p. 20)	Explicit: "ethical and human rights risks" ([66], p. 20)	Explicit: "inadequate legal and regulatory frameworks" ([66], p. 20)	Explicit: frames AI as addressing competitive threats while enabling developmental leapfrogging
Mauritius	Explicit: "lack of skilled professionals in AI and emerging technologies" ([67], p. 16)	Implicit: theme identified during analysis but no specific textual evidence extracted	Explicit: directly addressed in policy	Implicit: theme identified during analysis but no specific textual evidence extracted	Explicit: "declining productivity and competitiveness" ([67], p. 23); "slow economic growth" ([67], p. 24)
Nigeria	Implicit: theme identified during analysis but no specific textual evidence extracted	Implicit: theme identified during analysis but no specific textual evidence extracted	Explicit: directly addressed in policy	Implicit: theme identified during analysis but no specific textual evidence extracted	Explicit: emphasizes global competitiveness, viewing AI adoption as strategic positioning within global value chains
Rwanda	Implicit: theme identified during analysis but no specific textual evidence extracted	Implicit: theme identified during analysis but no specific textual evidence extracted	Indirect: "low public sector adoption of AI" ([29], p. 7), implicitly linked to access and equity barriers	Implicit: theme identified during analysis but no specific textual evidence extracted	Explicit: "private sector hesitancy and resource gaps" ([29], p. 7)
South Africa	Implicit: theme identified during analysis but no specific textual evidence extracted	Implicit: theme identified during analysis but no specific textual evidence extracted	Explicit: directly addressed in policy	Implicit: theme identified during analysis but no specific textual evidence extracted	Explicit: "promoting the integration of artificial intelligence technologies aims to drive economic growth, enhance societal well-being, and position South Africa as a leader in AI innovation" ([68], p. 1); "The Need for a Coherent National Strategy" ([68], p. 3)
Tanzania	Implicit: theme identified during analysis but no specific textual evidence extracted	Implied but not directly mentioned	Explicit: "lack of inclusivity and equity" ([69], pp. 12, 14, 25); commitments to marginalized groups including rural communities, persons with disabilities, and women	Implicit: theme identified during analysis but no specific textual evidence extracted	Not documented
Zambia	Implicit: theme identified during analysis but no specific textual evidence extracted	Implicit: theme identified during analysis but no specific textual evidence extracted	Implicit: noted through access-oriented interventions	Explicit: "governance and regulatory gaps" ([70], p. 24)	Not documented

Note. "Explicit" indicates a direct quotation or specific textual evidence documented in the policy. "Implicit/Indirect" indicates the theme is inferable from access-oriented interventions or related language without direct articulation. "Implicit: theme identified during analysis but no specific textual evidence extracted" indicates that the theme was identified during analysis but evidence is diffuse across the document; no specific quote was extracted. "Implied but not directly mentioned" indicates that the theme can be inferred but is not stated. "Not documented" indicates that the theme was not identified in the analyzed text. See Appendix A1 for the rubric criteria used to derive justification ratings.

OECD [47] dimensions, including smart design, stakeholder engagement, and contextual settings, along with their subcomponents findings, as columns. Each cell summarized how a specific country's policy addressed the corresponding dimensions and subcomponents based on the thematic analysis. For instance, a cell at the intersection of a given country and 'Smart Design: Feasibility' summarized the textual evidence from that country's policy regarding resource allocation, capacity planning, and barrier mitigation, enabling systematic comparison of feasibility provisions across all ten countries. This structure made it possible to identify patterns, convergences, and divergences across countries. The matrix was further complemented by a holistic narrative synthesis of all 10 policies, supported by direct quotations and documentary excerpts as empirical evidence. This interpretive synthesis revealed patterns of convergence and divergence across various policy contexts, highlighting the critical implementation challenges of AI and AIED policies in Africa beyond skepticism, particularly the "question marks" this study aims to address.

3. Results

This section is organized across three analytical dimensions: smart policy design (3.1), stakeholder engagement (3.2), and contextual alignment (3.3), corresponding to Research Questions 1, 2, and 3, respectively.

3.1. Smart policy design

This subsection presents findings on the AI and AIED policies of the analyzed African countries, focusing on justification (3.1.1), goal clarity (3.1.2), and implementation feasibility (3.1.3). Table 3d summarizes the overall smart policy design ratings for each country across the three subcomponents. Tables 3a, 3b, and 3c provide the detailed evidence underpinning these ratings, and Fig. 2 presents a cross-dimensional synthesis, enabling a comparative presentation across all ten countries and seven subcomponents simultaneously.

3.1.1. Justification for African AI and AIED policies

All analyzed countries articulate why AI and AIED policies are needed; however, the evidentiary basis underpinning these justifications varies considerably. As shown in Table 3a and Fig. 2, only Rwanda and

Table 3b
African AI and AIED policies goal-orientation by country.

Country	Vision Statement	Operational Specificity	Timeline	Timeline Evidence
Benin	"By 2027, Benin should enjoy a high profile thanks to artificial intelligence, which is a lever for the growth of strategic sectors, as applied in an opportunistic approach" ([63], p. 44)	Vision structured across multiple thematic domains ([63], p. 44)	Defined: 2023–2027	Explicit end-date embedded in vision statement
Egypt	Present but no direct quote documented	Limited operational specificity documented	Not explicitly documented	No timeline evidence documented in analyzed text
Ghana	"by 2033, people living in Ghana will experience a transformed society where AI advances the potential of people, government, businesses, and systems" ([64], p. 12)	Action plan details specific activities for designated years (2023, 2024, 2025)	Defined: 2023–2033 (ten-year strategic timeline)	[64], p. 26
Kenya	Vision encompasses strategic elements: economic growth, competitiveness, data governance, agile AI governance, public trust, and social impact ([66], p. 62)	Consolidates all objectives within 2025–2030 without sequential phasing	Defined: 2025–2030, but lacks phased roadmap with milestones	No sequential phasing; all objectives grouped within single timeframe
Mauritius	Present; aims to become a regional fintech hub	Lacks measurable performance indicators	Not explicitly documented	No timeline evidence documented in analyzed text
Nigeria	Present with explicit timeline	Defined vision statement	Defined: five-year horizon	"Strategic initiatives to be implemented over five (5) years" ([28], p. 27)
Rwanda	Present with explicit timeline	Defined vision statement	Defined: five-year plan	Phased implementation with annual activity schedules ([29], pp. 10–22)
South Africa	Present but aspirational	Does not meet SMART criteria; e.g., "Ensure that South Africa has a robust AI talent pool" (p. 9) lacks targets/ timelines; "Advance technological capabilities and drive innovation" (p. 9) does not specify capabilities or metrics [68]	Not explicitly documented	No timeline evidence documented in analyzed text
Tanzania	Present but no direct quote documented	No internal milestone timelines	Aligned with overarching five-year horizon	Supports "National Digital Education Strategy 2024/25–2029/30" ([69], p. 12) and "National AI Strategy 2024/25–2029/30" ([69], p. 28)
Zambia	Present but no direct quote documented	Limited operational specificity documented	Not explicitly documented	No timeline evidence documented in analyzed text

Note. Strong/Yes requires a defined vision with explicit timelines, measurable targets, and phased milestones. Moderate/Partial indicates a vision that is present but lacks full SMART criteria or phased operational detail. Conditional indicates an aspirational vision without documented timelines, targets, or milestones. See Appendix A2 for the rubric criteria used to derive goal orientation ratings.

Table 3c
African AI and AIED policies feasibility assessment by country.

Country	Budgetary/Financial Provisions	Phased Implementation	Institutional Responsibility Assignment	Barrier Identification and Mitigation	Partnership/Resource Mobilization
Benin	Not explicitly documented	Not explicitly documented	Not explicitly documented	Not explicitly documented	Not explicitly documented
Egypt	Not explicitly documented	Not explicitly documented	Not explicitly documented	Not explicitly documented	Not explicitly documented
Ghana	Phased priorities described ([64], pp. 26–40)	Phased priorities ([64], pp. 26–40)	Not explicitly documented	"lack of coordination and investment in implementing the national AI strategy" acknowledged as critical risk ([64], p. 18)	Public-private partnerships ([64], p. 31); leveraging existing infrastructure ([64], p. 25)
Kenya	Not explicitly documented	Not explicitly documented	Not explicitly documented	Not explicitly documented	Not explicitly documented
Mauritius	Not explicitly documented	Not explicitly documented	Not explicitly documented	Similar limitations to Tanzania noted	Not explicitly documented
Nigeria	Feasibility relies on sustained investment	Not explicitly documented	Not explicitly documented	Resource constraints acknowledged; "funding shortfall" noted as high-probability risk ([28], p. 51)	Requires "additional funding from the public and private sectors" ([28], p. 51)
Rwanda	Budgetary frameworks outlined; "Establish a shared risk fund for AI development projects in ministries and agencies" ([29], p. 18)	Five-year plan with annual activity schedules ([29], pp. 10–22)	Institutional responsibility assigned for each activity (e.g., MINICT, RDB, MINEDUC, RAIO)	Explicitly recognizes gaps in infrastructure, skills, and data readiness ([29], pp. 6–7); targeted mitigation including cloud strategies, skills development, data governance	International and private sector partnerships including GIZ, global universities, cloud service providers ([29], pp. 4, 6, 11)
South Africa	Not explicitly documented	Not explicitly documented	Not explicitly documented	Not explicitly documented	Not explicitly documented
Tanzania	Lacks detailed budgetary allocations or financial commitments	Mechanisms for implementation phasing insufficiently detailed	Not explicitly documented	Infrastructural deficits pose barriers; aims to "bridge the digital divide" in "remote and underserved areas" ([69], p. 25)	Not explicitly documented
Zambia	Not explicitly documented	Not explicitly documented	Not explicitly documented	Similar limitations to Tanzania noted	Not explicitly documented

Note. Strong/Yes requires realistic implementation timelines, dedicated funding, capacity development plans, and barrier mitigation strategies. Moderate/Partial indicates potential feasibility with gaps in resource specification or barrier anticipation. Conditional indicates feasibility depending on addressing identified challenges with no documented contingency planning. See Appendix A3 for the rubric criteria used to derive feasibility ratings.

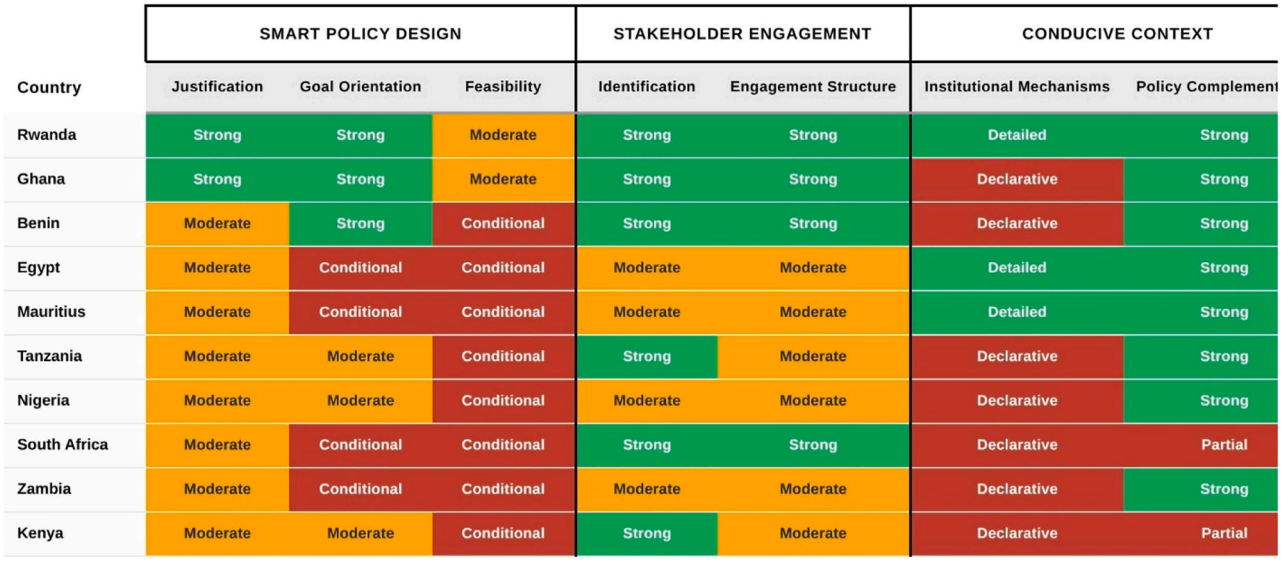

Fig. 2. Comparative heat map of AI and AIED policies across ten African countries.

Ghana consistently document specific data supporting claims about skills gaps, infrastructure deficits, or equity concerns, while South Africa provides explicit evidence on equity and economic positioning but relies on implicit evidence across other themes. The remaining policies tend to present justifications as assertions rather than evidence-based claims. Despite this limitation, five recurring justifications emerged across policy documents.

The first recurring justification is the shortage of skilled AI professionals and educators, encompassing both technical expertise and pedagogical AI integration capacity. This theme appears consistently across all policies (see Table 3a), with Benin, Ghana, Kenya, and Mauritius providing the most explicit articulations. For example, Benin identified "insufficient resources trained in AI" ([63], p. 19), while Ghana stressed the "limited availability of university professors, funding, and courses in AI" ([64], p.17). This shortage positions human capital development as a prerequisite for AI and AIED policy viability.

The second recurring justification concerns deficiencies in technological and institutional infrastructure. This theme emerged in most policies, with Tanzania being the only case in which infrastructure was implied but not directly mentioned. Countries such as Egypt and Benin

identify specific infrastructure and institutional support gaps, whereas Kenya frames these deficits as threats to technological sovereignty (see Table 3a). The third recurring justification, equity concerns, particularly digital divides and exclusion risks, emerged across several policies. Tanzania's policy most directly addresses inclusivity for marginalized groups, whereas Kenya signals concerns regarding discriminatory AI systems. Other policies, including Rwanda's, indirectly address equity through access-oriented interventions (see Table 3a).

A fourth recurring justification concerns governance deficits, with all countries identifying shortcomings in regulatory and ethical frameworks for AI governance. These deficits encompass data governance, ethical oversight, and regulatory coordination, with Zambia, Kenya, Benin, and Ghana providing the most explicit articulations. Beyond legal frameworks, policies express broader concerns about public trust, as reflected in Ghana's reference to "public skepticism" ([64], p. 17). Beyond identifying current challenges as justifications, most policies also articulate strategic rationales rooted in economic imperatives and competitive positioning. South Africa, Mauritius, Kenya, and Nigeria explicitly present AI adoption as vital to national competitiveness amid rapid global technological transformation (see Table 3a for specific quotations).

3.1.2. Goal orientation in African AI and AIED policies

An examination of goal and vision statements reveals considerable differences in operational specificity, as detailed in Table 3b Benin, Ghana, Kenya, Rwanda, and Nigeria presented defined vision statements with explicit timelines. For example, Benin targets 2027 ([63], p. 44), and Ghana sets a ten-year horizon to 2033, with year-specific action plans ([64], p. 12). Rwanda's policy features the most detailed phasing, with annual activity schedules structured within a five-year plan ([29], pp. 10–22).

However, several policies have outlined goals that lack operational specificity. South Africa's AI strategy includes aspirational objectives, such as ensuring "a robust AI talent pool" ([68], p. 9), that do not meet SMART criteria, lacking quantifiable targets or timelines. Egypt, Mauritius, and Zambia present similar visions without documented timelines or measurable indicators, as shown in Table 3b

Implementation timeline approaches also vary. While Ghana details activities for specific years and Nigeria outlines a five-year horizon, Kenya consolidates all objectives within a single 2025–2030 timeframe without sequential phasing. Tanzania's guidelines function as supporting documents aligned with broader national strategies rather than containing internal milestones (see Table 3b).

3.1.3. Feasibility of African AI and AIED policies

The feasibility findings indicate that no policy offers fully adequate documented feasibility provisions, although the depth of implementation planning varies considerably (see Table 3c). Rwanda's policy exhibits the strongest feasibility, featuring a five-year phased plan with annual activity schedules ([29], pp. 10–22), budgetary frameworks, institutional responsibility assignments, explicit recognition of infrastructure and skills gaps, and targeted mitigation measures, including cloud strategies and international partnerships.

Ghana similarly organizes implementation through phased priorities ([64], pp. 26–40) and public–private partnerships ([64], p. 31). Nigeria acknowledges resource constraints, explicitly noting "funding shortfall" as a high-probability risk ([28], p. 51), with feasibility contingent on sustained external investment.

In contrast, most other policies, including those of Tanzania, Mauritius, Zambia, Benin, Egypt, South Africa, and Kenya, lack detailed budgetary allocations, implementation phasing, or resource mobilization mechanisms. Tanzania's policy, for instance, aims to "bridge the digital divide" ([69], p. 25); however, the mechanisms for achieving this remain insufficiently specified. Successful implementation across these contexts hinges largely on external resource mobilization, as outlined in Tables 3c and 3d

Table 3d
African AI and AIED policies overall smart policy design by country.

Country	Justified	Goal-Orientated	Feasible	Brief Summary of the Findings
Benin	✓–	✓	✓×	Explicitly identifies workforce, infrastructure, and governance gaps; defined 2027 timeline with structured multi-domain vision; but lacks documented budgetary provisions, phased implementation, or institutional assignments.
Egypt	✓–	✓×	✓×	Mostly implicit justifications with explicit infrastructure concerns; limited operational specificity and no documented timeline; no feasibility provisions documented.
Ghana	✓	✓	✓–	Most themes explicitly justified with direct policy evidence; ten-year strategic timeline (2023–2033) with year-specific action plans; feasibility supported by phased priorities and PPPs but lacks documented budgets and institutional assignments.
Kenya	✓–	✓–	✓×	Explicitly justifies workforce, infrastructure, equity, and governance themes; defined 2025–2030 timeline but consolidates all objectives without sequential phasing; no feasibility provisions documented.
Mauritius	✓–	✓×	✓×	Explicitly identifies workforce shortages and declining competitiveness; aspirational vision lacking measurable indicators or documented timeline; no feasibility provisions documented.
Nigeria	✓–	✓–	✓×	Emphasizes economic/competitive positioning explicitly with other themes mostly implicit; defined five-year horizon with vision statement; feasibility dependent on securing additional public-private funding with funding shortfall acknowledged as high-probability risk.
Rwanda	✓	✓	✓–	Explicit economic justification with other themes implicit; five-year phased plan with annual activity schedules; strongest feasibility among all countries with budgetary frameworks, institutional responsibility assignments (MINICT, RDB, MINEDUC, RAIO), and international partnerships.
South Africa	✓–	✓×	✓×	Explicit on economic positioning and national strategy coherence; aspirational vision not meeting SMART criteria with no documented timeline or measurable targets; no feasibility provisions documented.
Tanzania	✓–	✓–	✓×	Explicit equity and inclusivity concerns addressing marginalized groups; five-year

(continued on next page)

Table 3d (*continued*)

Country	Justified	Goal-Orientated	Feasible	Brief Summary of the Findings
				horizon aligned with national strategies but no internal milestones; lack of budgetary allocations and detailed implementation mechanisms.
Zambia	✓–	✓×	✓×	Explicit governance and regulatory gaps; no documented timeline, operational specificity, or direct vision quote; no feasibility provisions documented.

Note. ✓ = Strong/Yes (goal supported by robust evidence, defined vision with measurable targets and phased milestones, and feasible implementation pathways); ✓– = Moderate/Partial (smart design elements present but with limitations in evidence base, goal specificity, or feasibility); ✓× = Conditional (design dependent on addressing identified challenges as documented in the policy text). The overall rating was derived from the decision rules in Appendix A: Strong requires at least two Strong subcomponents with none Conditional; Conditional requires all three subcomponents Conditional; and Moderate/Partial applies to all other combinations. See Appendices A1 (justification), A2 (goal orientation), and A3 (feasibility) for detailed rubric criteria.

3.2. Stakeholder engagement

This section presents findings on stakeholder engagement, focusing on stakeholder identification (3.2.1) and the relational dynamics shaping implementation (3.2.2). These findings are summarized in Table 4c and Fig. 2.

3.2.1. Identified stakeholders in African AI and AIED policies

Across all analyzed policies, five stakeholder categories consistently emerge: the state, academia and research institutions, the private sector, civil society, and international development partners.

The state stands out as the most prominent actor, serving as the primary driver and coordinator of AI governance. This leadership role is frequently formalized through dedicated coordinating bodies, such as Kenya's proposed National AI Steering Committee and Ghana's National AI Commission, which position the state as both a facilitator and regulator (see Table 4a).

Academic and research institutions are cast as drivers of foundational research, skills development, and innovation. For example, Ghana's collaboration with the KNUST Responsible AI Lab and Benin's emphasis on national research capabilities illustrate how policies leverage academia for evidence-based policymaking and indigenous AI capacity building (see Table 4a).

The private sector, encompassing both multinational technology firms and local startups, functions as a vital force for investment, innovation, and commercialization, with Nigeria highlighting contributions from over 120 researchers and startups ([28], p. 17), and Kenya stressing public–private partnerships for AI infrastructure and data access ([66], p. 41).

Civil society and the general public are recognized in nearly all policies, although the depth of their engagement varies. South Africa's policy identifies public participation in shaping governance frameworks, positioning civil society as co-creators, whereas Tanzania's guidelines position educators, learners, and communities primarily as beneficiaries and feedback providers (see Table 4a).

International and development partners support African AI policy ecosystems through financial resources, technical expertise, and global policy alignment. For example, Ghana's partnerships with GIZ and the Mastercard Foundation, and Rwanda's collaborations with GIZ FAIR Forward and The Future Society exemplify this category. All policies recognize these stakeholder categories; however, the mechanisms structuring their interactions differ considerably, as shown in Table 4a.

3.2.2. Stakeholder relationships in AI and AIED policies

Two primary relational dynamics emerge from the analysis, as detailed in Table 4b The most prevalent involves state-led coordination with multi-stakeholder consultation. In this model, government-appointed steering bodies oversee ministerial coordination, regulate private sector involvement, shape academic research agendas, and engage civil society within a hierarchical structure. For example, Kenya's governance flowchart exemplifies this arrangement, while Tanzania illustrates how educational institutions operate under state direction, with capacity contingent on ministry funding.

A second relational dynamic that emerged inductively from the analysis is the academia–industry–government "triple helix" structure, which aims to foster innovation through formal linkages that facilitate research commercialization and workforce development. This structure is explicitly articulated in South Africa's policy and operationalized through mechanisms such as Rwanda's AI innovation hubs, Kenya's coordinated AI innovation ecosystem, Ghana's joint innovation clusters, and Egypt's Center of Excellence in AI (see Table 4b).

3.3. Conducive context

This sub-section explores two subcomponents of a conducive context: institutional mechanisms (3.3.1) and policy complementarity (3.3.2). Table 5c summarizes the overall ratings, while Tables 5a and 5b present detailed evidence.

3.3.1. Institutional mechanisms in African AI and AIED policies

All analyzed countries document institutional mechanisms to support implementation, but these mechanisms vary considerably in operational specificity, falling into two categories, as shown in Table 5a. Rwanda, Egypt, and Mauritius outline relatively detailed mechanisms that designate responsible institutions, implementation timelines, budgetary allocations, and accountability provisions. For example, Egypt's policy details a national Council for AI, capacity-building programs, startup support initiatives, and monitoring and evaluation mechanisms ([65], pp. 34, 47, 49, 63, 67). Rwanda assigns institutional responsibility across MINICT, RDB, MINEDUC, and RAIO with phased annual schedules ([29], pp. 15–18; see Table 5a).

By contrast, the remaining countries present primarily declarative mechanisms, identifying the existence of certain bodies without detailed operational parameters. Zambia's strategy, for instance, indicates that the Ministry of Technology and Science will "coordinate AI adoption" ([70], p. 23); however, it fails to specify what coordination involves, which resources are necessary, or applicable timelines, a pattern mirrored in Benin, Ghana, Nigeria, Kenya, South Africa, and Tanzania (see Table 5a).

3.3.2. Complementarities between African AI and AIED policies and other policies

AI and AIED policies showed varying levels of alignment with national development plans and related policies (Table 5b). Most countries demonstrate strong alignment with AI policies that complement existing national frameworks without identified tensions. Notably, institutional-level complementarity has emerged. In Nigeria, universities, such as the University of Benin and the National Open University, have developed AI policies aligning with the National AI Strategy [71,72], whereas in Kenya, Aga Khan University has established guidelines for generative AI use in higher education tasks [73].

Tanzania's guidelines align with the National Digital Education Strategy, 2024/25–2029/30 ([74], p. 5), although institutional-level AI policy development remains in the early stages. Kenya presents the clearest case of partial alignment with visible implementation tension: the ICT Authority Bill of 2024 and the Computer Misuse and Cybercrimes (Amendment) Act of 2025 contain provisions that conflict with

Table 4a
African AI and AIED policies stakeholder identification by country and category.

Country	State	Academia & Research	Private Sector	Civil Society & Public	International Partners
Benin	Identified in policy	Explicit: enhancing "national research capabilities and AI education to build sustainable innovation ecosystems" ([63], p. 18)	Identified in policy	Identified in policy	Identified in policy
Egypt	Identified in policy; Center of Excellence in AI noted	Explicit: Center of Excellence in AI "connects academic research with industrial and governmental applications" ([65], p. 17)	Identified in policy	Identified in policy	Identified in policy
Ghana	Explicit: National AI Commission "to oversee AI governance, regulation, and integration across all sectors" ([64], p. 35)	Explicit: collaboration with KNUST Responsible AI Lab; academia "champions national AI research and supports evidence-based policymaking" ([64], p. 22)	Identified in policy	Identified in policy	Explicit: partnerships with GIZ and the Mastercard Foundation ([64], p. 55)
Kenya	Explicit: National Artificial Intelligence Steering Committee "to coordinate national AI initiatives and provide oversight on policy implementation" ([66], p. 42)	Identified as part of "AI innovation ecosystem" collaborations among "universities, the private sector, and government agencies" ([66], p. 38)	Explicit: "public–private partnerships for AI infrastructure and data access" ([66], p. 41)	Identified in policy	Identified in policy
Mauritius	Identified in policy	Identified in policy	Explicit: private sector as a "core partner in developing the national AI ecosystem through investment, research, and product innovation" ([67], p. 19)	Identified in policy	Identified in policy
Nigeria	Identified in policy	Identified as part of industry-led research programs in partnership with universities and public institutions ([28], p. 28)	Explicit: "over 120 researchers and startups" contributed to framework development "to accelerate innovation and job creation in the digital economy" ([28], p. 17)	Identified in policy	Identified in policy
Rwanda	Identified in policy	Identified as part of AI innovation hubs and living labs ([29], p. 25)	Identified in policy	Identified in policy	Explicit: collaborations with GIZ FAIR Forward and The Future Society to "build local capacity for responsible AI governance" ([29], p. 12)
South Africa	Identified in policy; Triple Helix identified as "innovation-driven partnership model" ensuring "knowledge creation, policy direction, and market application" ([68], p. 33)	Identified as part of Triple Helix model	Identified as part of Triple Helix model	Explicit: "public participation in shaping ethical data and AI governance frameworks" ([68], p. 47)	Identified in policy
Tanzania	Identified in policy; Ministry of Education, Science, and Technology provides funding and capacity-building support	Explicit: educational institutions tasked with "implementing AI in teaching, learning, and administration" ([69], p. 25)	Explicit: "public-private partnerships and informal innovation networks with startups and EdTech firms" ([69], p. 26)	Explicit: educators, learners, parents, and communities as "cross-cutting stakeholders who participate in AI adoption, provide feedback, and ensure inclusivity" ([69], pp. 20–22); media "raise awareness and educate the public on AI in education" ([69], p. 26)	Identified in policy
Zambia	Identified in policy	Identified in policy	Identified in policy	Identified in policy	Identified in policy

Note. "Identified in policy" indicates the stakeholder category is named without specific institutions, roles, or functions documented. "Explicit" indicates specific institutions, roles, or functions are described with supporting textual evidence. See Appendix B1 for the rubric criteria used to derive stakeholder identification ratings.

the AI Strategy on data protection and cybersecurity governance, and the AI policy does not acknowledge this partial misalignment, as shown in Tables 5b and 5c.

4. Discussion

4.1. Revisiting key findings

Moving beyond skepticism in Africa's AI and AIED policies is not solely about the policies' vision or excessive optimism but about revisiting the question marks surrounding the realistic implementation architecture of such policies. By employing the adapted OECD [47] analytical framework across ten African nations, this study reveals that while these policies exhibit conceptual soundness, they consistently lack the operational mechanisms essential for practicability. This systematic gap between aspirational rhetoric and actionable implementation has significant implications for policymakers, educators, and development partners across the sampled countries and, potentially, across the African continent as a whole, subject to the limitations discussed in Section 4.4.

With respect to Research Question 1 on smart policy design, although all ten countries articulated coherent justifications for AI and AIED integration, only Ghana and Rwanda demonstrated specificity in budgets, institutional roles, or accountability mechanisms. This finding

Table 4b
African AI and AIED policies stakeholder relationship dynamics by country.

Country	Relationship Dynamic	Evidence
Benin	Collaborative	All stakeholder categories identified with collaborative multi-stakeholder approach
Egypt	State-Led	State-led coordination; Center of Excellence in AI "connects academic research with industrial and governmental applications" ([65], p. 17)
Ghana	Collaborative	Multi-stakeholder approach with shared decision-making; National AI Commission for cross-sector governance; "joint innovation clusters" and "research-industry linkages" as part of Digital Ghana Agenda ([64], p. 40)
Kenya	State-Led	Hierarchical structure depicted in governance flowchart ([66], p. 43); government-appointed steering bodies oversee coordination; coordinated "AI innovation ecosystem" through "universities, the private sector, and government agencies" ([66], p. 38)
Mauritius	State-Led with collaborative elements	State coordinates while engaging in partnerships; focus on public-private sector R&D partnerships ([67], p. 31)
Nigeria	State-Led with collaborative elements	State coordinates with collaborative elements; "industry-led research programs" in partnership with universities and public institutions to "drive technology transfer and AI entrepreneurship" ([28], p. 28)
Rwanda	State-Led with collaborative elements	State-led coordination with collaborative partnerships; "AI innovation hubs and living labs" ([29], p. 25); international partnerships with GIZ FAIR Forward and The Future Society
South Africa	Collaborative	Multi-stakeholder approach; Triple Helix as "innovation-driven partnership model" ensuring "knowledge creation, policy direction, and market application" remain interconnected ([68], p. 33); "public participation in shaping ethical data and AI governance frameworks"
Tanzania	State-Led	Ministry provides funding and capacity-building; educational institutions implement under state direction; private sector collaborates via PPPs
Zambia	Collaborative	Collaborative multi-stakeholder approach stated but specific mechanisms not documented

Note. "State-led" refers to the government primarily directing AI governance. "Collaborative" refers to a multi-stakeholder approach with shared decision-making across sectors. "State-led with collaborative elements" signifies that the state coordinates while also engaging in collaborative partnerships. See Appendix B2 for the rubric criteria used to derive engagement structure ratings.

indicates that for the majority of African nations in this sample, AI and AIED policies function as aspirational documents rather than operational blueprints, raising question marks regarding the feasibility of these policies. This pattern extends and deepens the observations of both Guenduez et al. [44] and Schiff [1], who analyzed AI policy formulation across 27 and 24 countries, respectively, regarding the global articulation-implementation gap. While Guenduez et al. [44] highlight shifting priorities (e.g., declining emphasis on AI potential, increasing focus on governance, and consistent emphasis on capacity building), Schiff [1] found that developing an AI-ready workforce and increasing the number of AI experts are becoming the new normal, yet the integration of AI in education (AIED) remains predominantly absent from policy discussions. This study goes beyond identifying this absence to uncover the specific operational deficits that explain why AIED integration remains unrealized across African AI policies. Together, these studies suggest that the disconnect between policy articulation and operational capacity is a global phenomenon [75,76] but one that is particularly acute in African contexts, where developmental constraints make feasibility specifications the critical determinant of policy success.

Regarding Research Question 2 on stakeholder engagement, while all ten countries recognized five categories of stakeholders and implemented established state-led governance frameworks, the state dominates relationship dynamics across all ten nations, positioning end users in consultative rather than co-design roles. Despite this dominance, the "triple helix" relationship dynamic advocating collaboration among academia, industry, and government has gained traction. This finding is consistent with that of Sharma and Sharma [77], who observed in the BRICS nations the importance of inclusive, participatory approaches for effective governance. Similarly, Saheb and Saheb [78] found that governments confine substantive ethical discussions to data-level concerns while sidelining broader stakeholder involvement. Together, these findings suggest that encouraging diverse actors to collaborate and share power is essential for translating policy into practice.

The state's dominance has dual implications: on the one hand, it enables standardization and resource mobilization aligned with national development goals, consistent with UNESCO's guidance that national policies should be "contextual, consultative, dynamic, and implementable and measurable" ([79], p. 32); on the other hand, it can cause bureaucratic delays [80] and exclude key stakeholders, as observed in Nigeria's education system and in South African universities, where AI governance requires multiple stakeholders [81]. The challenge, therefore, lies in balancing state coordination with stakeholder participation to protect educational rights [82,83]. The differing historical contexts, resource limitations, and goals of digital sovereignty that characterize African nations [84] offer a plausible explanation for this tension. This state-centric approach positions African nations as guarantors of equitable AI transitions in education; however, its effectiveness hinges on incorporating participatory mechanisms that prevent the exclusion of end users. These findings suggest that African AI and AIED policies should establish structured power-sharing mechanisms, including stakeholder co-design phases, implementation committees with educator representation, and accountability frameworks requiring evidence of stakeholder input before policy ratification. Since state dominance is a structural feature of African AI governance, policies must harness coordination strengths while preventing exclusionary decisions. Section 4.3 details these recommendations.

Regarding Research Question 3 on conducive contexts, one key issue that emerges from these findings is the uneven development of institutional mechanisms and regulatory alignment. Only three countries established clear institutional mechanisms, while seven expressed intentions without specific details. Furthermore, while policies in Rwanda, Tanzania, and Nigeria align with existing national policies, others, such as Kenya's, present implementation tensions between the AI strategy and related legislation, including the ICT Authority Bill of 2024 and the Computer Misuse and Cybercrimes (Amendment) Act of 2025. These findings accord with Guenduez et al. [44] and further corroborate Funa and Gabay [85], whose research indicates that policies with explicit regulatory alignment mechanisms can mitigate such tensions; Kenya's case exemplifies this finding with particular clarity.

Overall, the findings of the current study complement and extend existing scholarship. While studies such as that of Guenduez et al. [44] identified global trends, this study reveals that articulation-implementation disconnect is particularly acute in African contexts. Where Schiff [1] identified the absence of AIED globally and Saheb and Saheb [78] documented stakeholder engagement gaps, this study uncovers the specific operational deficits that explain why this absence persists while demonstrating how state dominance creates distinct challenges that global analyses cannot capture. This research contributes to AI and AIED policy conversation by employing a robust methodological process guided by the adapted OECD [47] analytical framework to provide a comprehensive evaluation across all four African zones, as detailed in Section 4.2. However, these findings must be interpreted with caution, as stated in Section 4.4, because only a few of the ten policies have integrated implementation mechanisms into their

national frameworks (see Fig. 2), while the remainder, though conceptually sound, lack the specificity needed to transform aspirational documents into operational reality, as detailed in Tables 3d, 4c, and 5c. Therefore, fundamental questions surrounding the practicability of African AI and AIED policies remain, highlighting the need for continued investigation and policy reform.

4.2. Contributions of this study

While Section 4.4 discusses the limitations of this study transparently, it is equally important to identify its methodological and conceptual contributions. First, the comprehensive cross-regional scope, spanning ten countries across West, East, North, and Southern Africa, constitutes the broadest systematic analysis of African AI and AIED policies to date. This regional breadth captures variations in governance traditions, economic development levels, and policy maturity, enabling the identification of systemic patterns rather than country-specific idiosyncrasies. Prior studies have typically examined individual countries (e.g., [58] on Tanzania; [17] on South Africa) or addressed African AI governance only as part of broader global surveys (e.g., [44,1]), limiting their capacity to identify patterns specific to the African context.

Second, the systematic adaptation of the OECD [47] framework to the African AI and AIED governance context provides a structured, criterion-based analytical approach that is both rigorous and replicable, accounting for Africa's distinctive governance landscape while maintaining the framework's core analytical power. Third, the study intervenes at a critical temporal juncture; with most African AI and AIED policies released between 2023 and 2025 entering active implementation phases, the analysis provides timely evidence during the window when policy design can still be revised before institutional commitments become entrenched. This temporal positioning is particularly significant given the projected 2026–2027 implementation window, during which course corrections remain feasible.

Fourth, by examining the internal architecture connecting policy justifications, goals, feasibility, stakeholder mechanisms, and institutional provisions, this study bridges the analytical space between aspirational policy rhetoric and operational prerequisites, a persistent gap in AI governance research that tends to evaluate policies either at the level of principles or at the level of outcomes. Fifth, methodological rigor was enhanced through structured rating rubrics, independent coding by four researchers with inter-rater reliability assessed across all documents, and a comparative matrix approach for systematic cross-country analysis. Sixth, the findings are oriented toward practical actionability, identifying specific operational gaps, including missing budgets, unspecified timelines, declarative institutional mechanisms, and regulatory contradictions, thereby providing policymakers with a diagnostic basis for targeted policy refinement, educational institutions with evidence to inform institutional AI readiness strategies, and development partners with criteria for prioritizing technical assistance.

4.3. Policy & practical implications

This study identified implications across three dimensions of AI and AIED policy practicability, drawn from ten African countries. These implications emerge from the adapted OECD [47] framework's emphasis on implementation prerequisites, a deliberately chosen analytical lens to produce findings that policymakers can act on during the current critical window of AI policy implementation in the sampled countries and, by extension, in comparable African contexts.

The first implication relates to the necessity of phased implementation frameworks with clear resource allocation mechanisms. The findings in Section 3.1 revealed that most policies lack explicit budget allocations and phased timelines that connect goals to actions. Even countries with the strongest specifications acknowledge funding gaps that require external mobilization, introducing uncertainty into implementation. This finding suggests that governments should develop

Table 4c
African AI and AIED policies overall stakeholder engagement.

Country	Identification	Relationship Dynamic	Brief Summary of the Findings
Benin	Strong	Collaborative	All five stakeholder categories identified with explicit academic role in building AI research and education ecosystems; collaborative multi-stakeholder approach across all categories.
Egypt	Moderate	State-Led	Stakeholders identified with explicit state and academic roles through the Center of Excellence in AI connecting research with applications; state-led coordination model.
Ghana	Strong	Collaborative	Strongest identification with explicit roles across state (National AI Commission), academia (KNUST Responsible AI Lab), and international partners (GIZ, Mastercard Foundation); collaborative shared decision-making with joint innovation clusters and research-industry linkages.
Kenya	Strong	State-Led	Strong identification with explicit steering committee and PPP mechanisms; state-led hierarchical governance with government-appointed bodies overseeing coordination despite multi-sector collaboration.
Mauritius	Moderate	State-Led with collaborative elements	Moderate identification with explicit private sector role in investment, research, and innovation; state coordinates while engaging in public-private R&D partnerships.
Nigeria	Moderate	State-Led with collaborative elements	Moderate identification with explicit private sector engagement (120+ researchers and startups) and academic partnerships; state-led coordination with industry-led research programs driving technology transfer.
Rwanda	Strong	State-Led with collaborative elements	Strong identification with explicit international partnerships (GIZ FAIR Forward, The Future Society) and innovation hubs; state-led coordination complemented by collaborative partnerships for responsible AI governance capacity-building.
South Africa	Strong	Collaborative	Strong identification through Triple Helix model linking government, academia, and industry; collaborative multi-stakeholder approach with explicit public participation in shaping ethical data and AI governance frameworks.
Tanzania	Strong	State-Led	Strong identification with explicit roles for academia (implementing AI in education), private sector (PPPs with EdTech firms), and civil society (educators, learners, parents); state-led with ministry directing funding and capacity-building.

(*continued on next page*)

Table 4c (*continued*)

Country	Identification	Relationship Dynamic	Brief Summary of the Findings
Zambia	Moderate	Collaborative	All five stakeholder categories identified but none with specific institutions, roles, or functions documented; collaborative approach stated but specific engagement mechanisms not documented.

Note. Strong = both subcomponents Strong, with all stakeholders identified with specific roles and collaborative or well-structured engagement mechanisms documented. Moderate = at least one subcomponent Moderate, with stakeholders identified but gaps in role specificity, coordination mechanisms, or operationalization. Weak = at least one subcomponent Weak. Overall ratings are derived from Appendix B; see Appendices B1 and B2 for detailed rubric criteria. Zambia's overall rating reflects that while a collaborative approach is stated, all five stakeholder categories are identified without specific institutions, roles, or functions documented, and specific engagement mechanisms are not documented (see Tables 4a and 4b).

detailed implementation roadmaps that break down broad policies into phased initiatives, explicitly linking objectives, activities, resources, timelines, responsibilities, and monitoring mechanisms. For instance, instead of merely stating "establish AI research centers," policies could specify: "Establish the first AI research center at [specific venue] by [specific year], with an initial budget of [specific amount] from [specified source], focusing on [specific area], staffed by [specific number] researchers or other experts, with expansion to three additional centers by [specific year(s)] contingent on demonstrated results from the initial center." This level of specificity enhances accountability and adaptability in implementation.

The second implication involves embedding iterative monitoring and evaluation systems with participatory mechanisms that engage frontline actors. While the findings in Section 3.2 documented five stakeholder categories, frontline implementers (including institutions from various sectors and stakeholders from education, such as teachers and school leaders) are often positioned as policy recipients rather than co-designers, despite their crucial role in enacting AI and AIED policies. Governments should therefore establish systematic monitoring and evaluation systems that prioritize stakeholder engagement through (1) participatory feedback loops engaging frontline implementers via regular surveys, focus groups, and advisory panels to identify implementation barriers and local adaptations, with documented processes for incorporating feedback; and (2) independent evaluation mechanisms, which could involve partnerships with universities or civil society organizations, to conduct rigorous assessments of the effectiveness of AI initiatives, their equity impacts, and any unintended consequences.

The third implication emphasizes the development of regulatory coherence through cross-sectoral policy harmonization processes. The findings in Section 3.3 highlight regulatory contradictions and coordination gaps between AI and AIED policies and other related policies. This finding stresses the need for governments to establish permanent inter-ministerial AI coordination units (not merely advisory committees) with the authority to conduct regulatory impact assessments, ensuring that new or existing policies across sectors remain consistent with the AI and AIED governance frameworks. These units should implement structured processes, such as (1) conducting quarterly regulatory audits to identify contradictions between AI strategies and other policies; (2) establishing harmonization protocols that require consultation with AI coordination units before enacting AI-relevant policies; and (3) creating dispute resolution mechanisms to address conflicts between ministries, sectors, and institutions when policy objectives diverge. Collectively, these implications serve as interventions that can enhance policy practicability by addressing systematic gaps between current policy designs and operational requirements for implementation. For policymakers currently drafting or revising AI strategies, these recommendations offer a diagnostic checklist: each implication targets a specific, evidence-based operational deficit and can be adapted to individual national contexts, resource envelopes, and governance traditions.

4.4. Limitations and future research directions

The findings of this study should be interpreted in light of five methodological and conceptual limitations, several of which are flagged in the methodology (Section 2) and elaborated upon here with their implications for interpretation and future research.

First, as noted in Section 2.1, the study's reliance on publicly available policy documents reveals prescribed actions, but not the actual processes or outcomes of implementation. Document analysis provides access to formally codified positions but cannot capture how policies are enacted, resisted, or adapted by frontline actors. The lack of budget details in these documents suggests that while budgets might exist through separate fiscal processes, the formally communicated information available to those involved in implementation is incomplete. Future research should integrate document analysis with key informant interviews, direct observations in educational settings, and an examination of implementation documents to evaluate how policies are implemented in practice.

Second, the sample of ten countries is restricted to English-language documents, which omits Francophone and Lusophone contexts. This exclusion implies that the findings may not be generalizable to these countries, especially to those lacking formal AI policies available in the English language. Additionally, the policies analyzed were released between 2023 and 2025, a period of rapid and ongoing AI policy development across Africa. Given this accelerated pace, recent policy developments may not be reflected in the present analysis. Furthermore, as discussed in Section 2.1, the purposive sampling approach was driven by practical considerations of data availability and linguistic consistency rather than predetermined representational targets, which limits the generalizability of the findings. The findings should, therefore, be understood as illustrative of patterns within available Anglophone African AI policies during this specific temporal window, rather than representative of continental AI governance approaches. Future research should incorporate multilingual analysis, longitudinally track policy evolution, and employ systematic sampling strategies to ensure broader representational coverage.

Third, although three institutional-level documents from Aga Khan University (AKU) in Kenya, the National Open University of Nigeria (NOUN), and the University of Benin in Nigeria, as shown in Table 2, complemented the national strategies in the sample (see Section 2.1), the primary analytical emphasis on national-level policies likely overlooked the crucial dynamics at the subnational, institutional, and community levels that are essential for effective implementation. Frontline actors wield significant discretion in applying these policies and frequently modify them in ways that differ from policymakers' original intentions. Future research should employ multilevel analytical frameworks to investigate implementation at the national, subnational, institutional, and classroom levels, using ethnographic methodologies.

Fourth, although this study assessed the prerequisites for implementation (smart policy design, stakeholder engagement, and conducive context), it did not evaluate the actual outcomes or impacts of implementation. As discussed in Section 2.2, the exclusion of the OECD [47] framework's fourth dimension (coherent implementation strategy) reflects this deliberate scope boundary. Future research should focus on examining actual implementation processes and outcomes through empirical studies. These studies should investigate what occurs when policies are enacted, whether the intended objectives are achieved, and who benefits or is harmed by them.

Fifth, inter-rater reliability was assessed using a simple percentage agreement (85.7%), which, while exceeding the commonly accepted 80% threshold for qualitative research [60], does not account for the possibility of chance agreement. Employing conservative measures, such

Table 5a
African AI and AIED policies institutional mechanisms by country.

Country	Responsible Institutions	Timelines	Budget/Resources	Accountability & Monitoring	Specific Evidence	Rating
Benin	Referenced in policy but without specific operational detail documented	Referenced in policy but specifics not documented in analyzed text	Not explicitly documented	Not explicitly documented	Policy references institutional arrangements and timelines but analyzed text does not document specific operational parameters (responsible bodies, budget figures, or monitoring mechanisms); consistent with Table 3c feasibility evidence	Declarative
Egypt	National Council for AI ([65], p. 34); staffing specifications ([65], pp. 3–4)	Documented in policy	Documented in policy	Monitoring and evaluation mechanisms ([65], p. 67)	Council for AI; guidelines for Responsible and Ethical AI (p. 47); capacity-building programs (p. 49); startup support (p. 63); M&E mechanisms (p. 67)	Detailed
Ghana	National AI Commission named but operational parameters not detailed	Not specified	Not specified	Not specified	Outlines existence of governance body without detailing coordination specifics, resources, or timelines	Declarative
Kenya	National Artificial Intelligence Steering Committee proposed ([66], p. 42)	Not specified	Not specified	Not specified	Steering committee proposed but coordination details, resources, and timelines not specified	Declarative
Mauritius	AI Council specified ([67], pp. 64–67)	Documented in policy	Funding frameworks ([67], p. 67); funding incentives specified	Regulatory frameworks and data protection measures ([67], pp. 64–67)	AI Council, funding incentives, regulatory frameworks, and data protection measures	Detailed
Nigeria	Referenced generally	Not specified	Not specified	Not specified	Bodies outlined without operational parameters; mirrors pattern of declarative mechanisms	Declarative
Rwanda	MINICT, RDB, MINEDUC, RAIO assigned institutional responsibility for each activity	Phased five-year plan with annual schedules ([29], pp. 12–16)	Budgetary allocations documented	Technical assistance facility for AI startup incubators ([29], pp. 15–17); ethical AI guidelines (p. 18)	Phased plan, institutional assignments, budgets, startup incubators, ethical guidelines	Detailed
South Africa	Referenced in policy	Not specified	Not specified	Not specified	Bodies outlined without detailed operational parameters	Declarative
Tanzania	Ministry of Education, Science, and Technology referenced; educational institutions required to develop policies for ethical AI use ([69], pp. 22–26)	No implementation timelines provided	Not specified	No procedural guidance or monitoring mechanisms	Requires ethical AI policy development without timelines, procedural guidance, or monitoring	Declarative
Zambia	Ministry of Technology and Science to "coordinate AI adoption" ([70], p. 23)	Not specified	Not specified	Not specified	Coordination role stated without specifying what coordination involves, resources needed, or timelines	Declarative

Note. "Detailed" designates responsible institutions, timelines, and budgets with operational specificity. "Declarative" outlines the existence of bodies without operational parameters. See Appendix C1 for detailed rubric criteria. Institutional mechanisms (Table 5a) and feasibility (Table 3c) assess overlapping but distinct dimensions. A policy may reference institutional arrangements without documenting the feasibility elements (budgets, phased plans, barrier mitigation) that would demonstrate implementability.

as Cohen's kappa or Krippendorff's alpha, would provide a stronger estimate of coding consistency. Future studies should employ formal reliability coefficients to enhance methodological rigor. Additionally, while rating rubrics guided coding decisions (see Appendices A–C), the interpretive nature of qualitative policy analysis meant that coders exercised judgment when applying rubric criteria to nuanced or ambiguous policy languages, which could limit the exact replicability of the ratings by other research teams.

Despite these limitations, this study makes a significant contribution by evaluating the prerequisites for implementing African AI and AIED policies using the adapted OECD [47] framework, offering an evidence base from which policymakers and stakeholders can identify and address operational gaps. Future research addressing these limitations will facilitate a holistic understanding of AI and AIED policies in the African context, which is crucial for transforming ambitious policy visions into equitable and effective implementations that genuinely address the developmental challenges these policies aim to address. Thus, AI and AIED policies can thrive beyond skepticism.

5. Conclusion

This study examined the practicability of AI and AIED policy documents across ten African countries through the lens of the OECD [47] analytical framework, focusing on smart policy design, stakeholder engagement, and conducive context. The findings reveal that while these policies are conceptually sound with coherent justifications and identified stakeholders, significant implementation gaps persist, as evidenced by Fig. 2. Most policies lack explicit budgets, phased timelines, and detailed institutional mechanisms necessary for operationalization, as evidenced by Tables 3c and 5a. Despite these limitations, the emergence of AI and AIED policies across the sampled countries and the wider African context represents a critical developmental milestone. Moving beyond skepticism requires transforming these aspirational policy visions into actionable frameworks through evidence-based resource allocation, participatory monitoring systems, and cross-sectoral regulatory harmonization. As the sampled countries and African nations broadly navigate the early stages of AI governance, addressing the documented gaps between policy ambition and

Table 5b
African AI and AIED policies policy complementarity by country.

Country	Evidence of Alignment	Evidence of Tensions or Gaps	Rating
Benin	AI policy complements existing national frameworks; no tensions documented	No contradictions documented	Strong Alignment
Egypt	AI policy complements existing national frameworks; no tensions documented	No contradictions documented	Strong Alignment
Ghana	AI policy complements existing policies including national and institutional levels; no tensions documented	No contradictions documented	Strong Alignment
Kenya	Aga Khan University guidelines for generative AI in higher education align with responsible AI use ([73], p. 3); institutional-level complementarity present	The ICT Authority Bill of 2024 and the Computer Misuse and Cybercrimes (Amendment) Act of 2025 contain provisions that create implementation tensions with the AI Strategy on data protection and cybersecurity governance ([66], p. 43); AI policy document does not acknowledge these tensions; selective engagement with existing frameworks	Partial Alignment
Mauritius	AI policy complements existing national frameworks; no tensions documented	No contradictions documented	Strong Alignment
Nigeria	Institutional-level complementarity: University of Benin and National Open University developed AI policies aligning with National AI Strategy [71,72]	No contradictions documented	Strong Alignment
Rwanda	Policy aims to "harness AI for sustainable and inclusive growth" ([29], p. 5), supporting economic transformation goals; complements existing national frameworks	No contradictions documented	Strong Alignment
South Africa	Some alignment documented but integration is aspirational	Aspirational nature of alignment; integration mechanisms not articulated	Partial Alignment
Tanzania	Guidelines aligned with National Digital Education Strategy, 2024/25–2029/30 ([74], p. 5); educators urged to evaluate reliability, fairness, safety, and trustworthiness of AI tools ([74], p. 8)	Institutional-level AI policy development still in early stages; most universities still creating context-specific frameworks	Strong Alignment
Zambia	AI policy complements existing national frameworks; no tensions documented	No contradictions documented	Strong Alignment

Note. "Strong Alignment" indicates that the AI policy complements existing policies with no identified contradictions. "Partial Alignment" indicates some connection to existing policies, but the connection between them is aspirational, incomplete, or contains identified tensions. See Appendix C2 for detailed rubric criteria.

Table 5c
African AI and AIED policies overall conducive context.

Country	Institutional Mechanisms	Policy Complementarity	Brief Summary of the Findings
Rwanda	Detailed	Strong Alignment	Most operationally detailed: MINICT, RDB, MINEDUC, and RAIO assigned institutional responsibility with phased five-year plan, budgetary allocations, startup incubators, and ethical AI guidelines; strong alignment with national frameworks for sustainable and inclusive growth.
Egypt	Detailed	Strong Alignment	National Council for AI with staffing specifications, documented timelines and budgets, and M&E mechanisms; complements existing national frameworks with no identified tensions.
Mauritius	Detailed	Strong Alignment	AI Council specified with funding incentives, regulatory frameworks, and data protection measures; complements existing national frameworks with no identified tensions.
Benin	Declarative	Strong Alignment	Institutions and timelines referenced in policy but without specific operational details, budgets, or monitoring mechanisms documented; complements existing national frameworks with no tensions.
Ghana	Declarative	Strong Alignment	National AI Commission named but operational parameters (coordination specifics, resources, timelines) not detailed; complements national and institutional-level policies with no tensions.
Nigeria	Declarative	Strong Alignment	Bodies outlined without operational parameters, mirroring declarative pattern; institutional-level complementarity demonstrated by university AI policies (University of Benin, National Open University) aligning with national strategy.
Zambia	Declarative	Strong Alignment	Ministry of Technology and Science assigned coordination role but without specifying what coordination involves, resources needed, or timelines; complements existing national frameworks with no tensions.
Tanzania	Declarative	Strong Alignment	Ministry referenced and institutions required to develop ethical AI policies, but without timelines, procedural guidance, or monitoring mechanisms; aligned with National Digital Education Strategy 2024/25–2029/30.
Kenya	Declarative	Partial Alignment	National AI Steering Committee proposed but coordination details, resources, and timelines not specified; implementation

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Table 5c (*continued*)

Country	Institutional Mechanisms	Policy Complementarity	Brief Summary of the Findings
			tensions identified between AI Strategy and ICT Authority Bill of 2024 and Cybercrimes Amendment Act of 2025 on data protection and cybersecurity governance.
South Africa	Declarative	Partial Alignment	Bodies referenced without detailed operational parameters; alignment with existing frameworks documented but aspirational, with integration mechanisms not articulated.

Note. Institutional Mechanisms: "Detailed" designates responsible institutions, timelines, and budgets; "Declarative" outlines the existence of bodies without operational parameters. Policy Complementarity: "Strong Alignment" indicates that AI policy complements existing policies at the national and institutional levels, with no identified tensions; "Partial Alignment" indicates some alignment but with aspirational integration or identified tensions that may complicate implementation. Overall: Strong = Detailed operational mechanisms + Strong Alignment; Moderate = either Detailed mechanisms + Partial Alignment, or Declarative mechanisms + Strong Alignment; Weak = Declarative mechanisms + Partial Alignment. Overall ratings are derived from Appendix C, integrating Institutional Mechanisms (C1) and Policy Complementarity (C2). See Appendices C1 and C2 for detailed rubric criteria.

implementation prerequisites will be crucial for achieving equitable and sustainable AI integration in education and beyond.

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CRediT authorship contribution statement

Lucy Michael Nyagoga: Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft. **Evance Joseph Mapunda:** Conceptualization, Methodology, Formal analysis, Validation, Writing – original draft, Writing – review & editing. **Mariana Julius Shirima:** Conceptualization, Methodology, Validation, Writing – original draft, Writing – review & editing. **Jecha S. Jecha:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Michael W. Nicodemus:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Michael Agyemang Adarkwah:** Conceptualization, Validation, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Rubric for Overall Smart Policy Design (RQ1)

This rubric integrates three subcomponents: justification of the policy (Appendix A1), goal orientation (Appendix A2), and feasibility (Appendix A3). The "Conditional" level reflects a deliberate methodological choice: because this study employs document analysis, the assessment is limited to what the policy text articulates. "Conditional" indicates that the document itself frames implementation as dependent on future conditions, an observable textual feature, rather than a judgment about inherent policy weakness beyond what the document supports.

Decision Rules for Overall Rating:

The overall rating is derived from the combination of the three subcomponent ratings, as follows:

Decision Rules and Overall Rating for Smart Policy Design.

Overall Rating	Decision Rule
Strong/Yes	At least two subcomponents rated Strong/Yes with no subcomponent rated Conditional
Moderate/Partial	Any combination not meeting Strong/Yes or Conditional criteria (i.e., mixed ratings across subcomponents, including at least one Moderate/Partial)
Conditional	All three subcomponents rated Conditional

Rubric:

Rubric for Overall Smart Policy Design and its Dimensions.

Rating Level	Criteria	Observable Indicators
Strong/Yes	Policy demonstrates evidence-based design with clear justification, well-defined goals with measurable targets, and feasible implementation pathways with strong contextual alignment	a) Justified goal supported by empirical evidence or systematic needs assessment (A1: Strong) b) Goal orientation includes defined vision with explicit timelines, measurable targets, and phased milestones (A2: Strong) c) Feasibility demonstrated through realistic resource plans, capacity considerations, and proactive barrier mitigation (A3: Strong or Moderate) d) At least two subcomponents rated Strong with no subcomponent rated Conditional
Moderate/ Partial	Policy exhibits smart design elements but with limitations across one or more subcomponents in evidence base, goal specificity, or feasibility specification	a) Justified goal present but may be conceptually rather than empirically grounded (A1: Strong or Moderate) b) Goal orientation present but may lack SMART criteria, phased milestones, or operational specificity (A2: Strong, Moderate, or Conditional) c) Feasibility articulated but with gaps in resource, capacity, or implementation planning (A3: Moderate or Conditional) d) Mixed ratings across subcomponents with at least one Moderate/ Partial
Conditional	Policy design is entirely contingent on addressing identified challenges; smart design principles could be met only if specified conditions across all dimensions are resolved	a) Goal justification assumes conditions not yet in place (A1: Conditional) b) Goal orientation is aspirational without timelines, targets, or milestones (A2: Conditional) c) Feasibility dependent on addressing resource, infrastructure, or capacity gaps with no documented mitigation (A3: Conditional) d) All three subcomponents rated Conditional

Appendix A1

Rubric for Justification Dimension.

Rating Level	Criteria	Observable Indicators
Strong/Yes	Policy goal is supported by robust evidence, systematic needs assessment, or demonstrated alignment with documented priorities	a) Cites empirical research, pilot studies, or evidence from comparable contexts b) References systematic needs assessment or stakeholder consultation findings c) Aligns with documented national priorities, international commitments, or evidence-based frameworks d) Provides data or analysis supporting the choice of AI in education as a priority
Moderate/ Partial	Policy goal is conceptually justified but lacks empirical grounding or systematic evidence	a) Provides logical rationale without empirical support b) References general trends or aspirational statements rather than context-specific evidence c) Assumes rather than demonstrates relevance to national education challenges d) Justification based on normative commitments rather than evidence of need or effectiveness
Conditional	Goal justification assumes conditions or evidence not yet available	a) Acknowledges evidence gaps but proceeds without them b) Justification contingent on future research, pilot results, or contextual developments c) Goal framed as exploratory or experimental rather than evidence-based d) Explicitly states that goal will be refined as evidence emerges

Appendix A2

Rubric for Goal Orientation Dimension.

Rating Level	Criteria	Observable Indicators
Strong/Yes	Policy articulates a defined vision with explicit timelines, measurable targets or strategic specificity, and phased milestones enabling staged execution and monitoring	a) Vision statement is clearly articulated with a defined end-state and strategic purpose b) Explicit implementation timeline with a specified start and end date c) Phased milestones, annual schedules, or sequenced activities that enable staged monitoring d) Operational specificity: goals are structured across thematic domains or sectoral priorities with identifiable actions

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Appendix A2 (*continued*)

Rating Level	Criteria	Observable Indicators
Moderate/ Partial	Policy presents a vision with some temporal or strategic parameters but lacks full SMART (specific, measurable, achievable, relevant, time-bound) criteria or phased operational detail	a) Vision statement is present but broadly framed or aspirational in language b) Timeline is defined but all objectives are consolidated within a single timeframe without sequential phasing c) Goals are organized thematically but lack measurable performance indicators d) Operational specificity is limited: goals describe directions rather than concrete, sequenced actions
Conditional	Policy vision is aspirational without documented timelines, targets, or milestones; goal orientation depends on future specification	a) Vision statement is present but without a defined timeline or end-date b) Goals do not meet SMART criteria: targets are unquantified, timelines absent, and metrics unspecified c) No phased milestones or implementation sequencing documented d) Goal framing is directional (e.g., "ensure," "advance," "promote") without specifying what, how much, or by when

Appendix A3
Rubric for Feasibility Dimension.

Rating Level	Criteria	Observable Indicators
Strong/Yes	Policy goal is realistic given identified resources, capacities, timelines, and contextual constraints	a) Specifies realistic implementation timeline with clear milestones b) Identifies dedicated funding sources or resource mobilization strategies c) Addresses capacity requirements and plans for capacity development d) Anticipates and provides strategies for overcoming implementation barriers e) Demonstrates awareness of contextual constraints and works within them
Moderate/ Partial	Policy goal is potentially feasible but with gaps in resource specification, capacity planning, or barrier anticipation	a) Timeline specified but may be optimistic given complexity b) Resources mentioned but sources or amounts unspecified c) Capacity needs acknowledged but development plans vague d) Some barriers anticipated but mitigation strategies underdeveloped e) Partial awareness of constraints without full integration into planning
Conditional	Policy feasibility depends on addressing identified challenges; goal is realistic only if specified conditions are met	a) Explicitly acknowledges feasibility depends on resource mobilization, infrastructure development, or capacity building b) Identifies specific conditions that must be resolved for implementation to proceed c) No contingency planning if conditions are not met d) Feasibility assumptions optimistic relative to documented contextual realities

Appendix B: Rubric for Overall Stakeholder Engagement (RQ2)

Decision Rules for Overall Rating:

This rubric integrates two subcomponents: stakeholder identification and role specification (Appendix B1) and engagement structure and mechanisms (Appendix B2).

Decision Rules and Overall Rating for Stakeholder Engagement.

Overall Rating	Decision Rule
Strong	Both B1 and B2 rated Strong
Moderate	At least one subcomponent rated Moderate (with the other Strong or Moderate)
Weak	At least one subcomponent rated Weak (with the other not Strong)

Rubric:

Rubric for Overall Stakeholder Engagement and its Dimensions.

Rating Level	Criteria	Observable Indicators
Strong	The policy comprehensively identifies all relevant stakeholders with specific roles and functions, and outlines collaborative or well-structured engagement mechanisms with evidence of operationalization	a) All relevant stakeholder categories explicitly named with specific institutions, roles, or functions (B1: Strong) b) Relationship dynamics articulated as collaborative or multi-stakeholder with shared decision-making processes specified (B2: Strong)

(*continued on next page*)

(*continued*)

Rating Level	Criteria	Observable Indicators
		c) Concrete engagement mechanisms described and operationalized (e.g., timelines, responsibilities, coordination structures) (B2: Strong) d) Both subcomponents rated Strong
Moderate	The policy identifies stakeholders and describes functional relationships but with gaps in role specificity, coordination mechanisms, or operationalization	a) All relevant stakeholder categories named but some without specification of roles or with varying levels of detail (B1: Moderate or Strong) b) Relationships described as functional but coordination mechanisms unclear, state-led without substantive shared decision-making, or engagement mechanisms mentioned but lacking specificity (B2: Moderate) c) At least one subcomponent rated Moderate
Weak	The policy has notable deficiencies in identifying stakeholders, defining relationships, or specifying engagement mechanisms	a) Stakeholder groups omitted, vaguely referenced, or listed without any role specification (B1: Weak) b) Relationships purely declarative or undefined; no concrete engagement mechanisms or operationalization (B2: Weak) c) At least one subcomponent rated Weak with the other not rated Strong

Appendix B1
Rubric for Stakeholder Identification Dimension.

Rating Level	Criteria	Observable Indicators
Strong	All five stakeholder categories (state, academia and research, private sector, civil society and public, international partners) are explicitly named with specific institutions, roles, or functions defined for most categories	a) State actors named with specific coordinating bodies or governance roles identified b) Academic and research institutions named with specific functions (e.g., research, capacity building, evidence generation) c) Private sector engagement specified with identified roles (e.g., investment, innovation, commercialization) d) Civil society and public roles articulated beyond beneficiary status (e.g., participation, feedback, co-creation) e) International partners named with specific contributions identified
Moderate	All five stakeholder categories named but some categories identified generally without specific institutions, roles, or functions	a) All categories present in the policy text b) Some categories identified with institutional specificity while others referenced generally (e.g., "relevant partners," "stakeholders") c) Roles implied but not explicitly defined for all categories
Weak	Notable omissions of stakeholder categories, or most categories referenced only vaguely without institutional or functional specificity	a) One or more stakeholder categories omitted or mentioned only in passing b) Categories listed without any specification of roles, functions, or institutional identity c) Stakeholder references primarily generic (e.g., "all relevant stakeholders")

Appendix B2
Rubric for Stakeholder Relationship Dynamics Dimension.

Rating Level	Criteria	Observable Indicators
Strong	Engagement relationships are collaborative or well-structured with concrete mechanisms described and evidence of operationalization	a) Relationship dynamics articulated as collaborative or multi-stakeholder with shared decision-making b) Concrete engagement mechanisms described (e.g., national commissions, advisory bodies, innovation hubs, joint clusters, consultation forums) c) Evidence that mechanisms are operationalized (e.g., assigned responsibilities, coordination structures, implementation timelines) d) Multi-directional engagement: stakeholders participate in shaping, not merely implementing, policy
Moderate	Engagement relationships are functional but with gaps in coordination specificity or operationalization; may be state-led with some collaborative elements	a) Relationships described as functional but coordination mechanisms unclear or underdeveloped b) Engagement mechanisms mentioned but lacking specificity regarding operation, representation, or influence c) State-led coordination with collaborative elements acknowledged but the state ultimately directs d) Stakeholder involvement evident but depth of participation unclear
Weak	Engagement relationships are purely declarative or undefined; mechanisms absent or entirely aspirational	a) Nature of relationships not defined or remaining entirely state-driven without specifying stakeholder roles in engagement b) No concrete engagement mechanisms documented c) Stakeholder involvement limited to being named without evidence of participation structures d) Engagement aspirational without any operational specifics

Appendix C: Rubric for Overall Conducive Context (RQ3)

This rubric integrates two subcomponents: institutional mechanisms (Appendix C1) and policy complementarity (Appendix C2).
Decision Rules for Overall Rating:

Decision Rules and Overall Rating for Conducive Context.

Overall Rating	Decision Rule
Strong	Institutional Mechanisms rated Detailed AND Policy Complementarity rated Strong Alignment
Moderate	Either Institutional Mechanisms rated Detailed with Partial Alignment, OR Institutional Mechanisms rated Declarative with Strong Alignment
Weak	Institutional Mechanisms rated Declarative AND Policy Complementarity rated Partial Alignment

Rubric:

Rubric for Overall Conducive Context and its Dimensions.

Rating Level	Criteria	Observable Indicators
Strong	Policy is supported by detailed operational mechanisms and demonstrates coherent integration with existing policy frameworks, creating an enabling environment for implementation	a) Responsible institutions specified with defined functions, timelines, budgets, and accountability mechanisms (C1: Detailed) b) AI policy explicitly references, builds upon, and is consistent with existing policy frameworks at national and institutional levels (C2: Strong Alignment) c) No identified contradictions between AI policy and other existing policies
Moderate	Policy demonstrates either detailed institutional mechanisms with some alignment gaps, or strong policy alignment with declarative institutional arrangements	a) Either operational mechanisms are detailed but policy alignment is partial or aspirational (Detailed + Partial Alignment), OR policy alignment is strong but institutional mechanisms lack operational specificity (Declarative + Strong Alignment) b) One enabling dimension is well-developed while the other requires further specification
Weak	Policy has declarative institutional mechanisms and only partial alignment with existing frameworks, limiting the enabling environment for implementation	a) Institutional mechanisms outlined without operational parameters (C1: Declarative) b) Policy alignment is aspirational, superficial, or contains identified tensions (C2: Partial Alignment) c) Both enabling dimensions require further development

Appendix C1
Rubric for Institutional Mechanisms Dimension.

Rating Level	Criteria	Observable Indicators
Detailed	Policy specifies concrete operational parameters including responsible institutions, implementation timelines, and resource allocations	a) Responsible institutions: specific government bodies, ministries, departments, or agencies named with clearly defined functions b) Timelines: explicit implementation milestones, phased approaches, or target dates specified c) Budgets/Resources: dedicated funding mechanisms, budget allocations, or resource mobilization strategies articulated d) Accountability: clear reporting lines, oversight mechanisms, or performance indicators identified e) Monitoring: evaluation frameworks, review timelines, or adaptive management processes described
Declarative	Policy acknowledges the need for institutional arrangements but lacks operational specificity	a) Institutions mentioned generally: references to "relevant ministries," "appropriate bodies," or "stakeholders" without specification b) Timelines absent or vague: aspirational language such as "in due course," "eventually," or "as resources permit" without concrete dates c) Resources implied but unspecified: acknowledgment that funding is needed without identifying sources or amounts d) Inadequate accountability mechanisms: no clear assignment of responsibility for implementation outcomes e) Monitoring aspirational: references to evaluation without articulation of how, when, or by whom

Appendix C2
Rubric for Policy Complementarities Dimension.

Rating Level	Criteria	Observable Indicators
Strong Alignment	AI policy demonstrates coherent integration with existing policy frameworks at national and institutional levels with no identified contradictions	a) Explicit referencing: AI policy cites and builds upon specific existing policies, strategies, or legal frameworks b) Consistent principles: core values, objectives, and approaches align with those in related policy domains c) Mutual reinforcement: AI policy provisions strengthen or are strengthened by other policy instruments d) Gap filling: AI policy addresses areas not covered by existing frameworks without contradiction e) Cross-referencing: mechanisms for coordination between AI and other policy implementation are specified
Partial Alignment	AI policy shows some connection to existing frameworks but integration is aspirational, superficial, incomplete, or contains identified tensions	a) General referencing: AI policy mentions alignment with "national development goals" or "education sector plans" without specificity b) Principle consistency but implementation tension: stated values align but operational approaches may diverge or create compliance challenges c) Aspirational integration: references to harmonization without articulating mechanisms d) Selective engagement: AI policy addresses some but not all relevant existing frameworks e) Coordination gaps: no specified mechanisms for resolving potential tensions between policy instruments f) Identified tensions: provisions in related laws or policies may create compliance challenges or implementation friction, whether or not acknowledged in the AI policy document

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