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Ethical AI Integration in African Higher Education: Enhancing Research Supervision, Grant Discovery, and Proposal Writing Without Compromising Academic Integrity

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ABSTRACT:

Purpose – This article investigates how artificial-intelligence (AI) tools can strengthen research supervision, grant discovery and proposal writing in African universities without eroding academic integrity.

Design/methodology/approach – A qualitative *systematic* review of **60 peer-reviewed and grey-literature sources (2020-2025)** was conducted. Inclusion and exclusion decisions followed a PRISMA cascade; full-text evidence was coded inductively in NVivo to surface themes around efficacy, risk and governance.

Findings – AI applications consistently reduce supervisor feedback-cycle time by an **estimated 45 %** (median, n = 7 institutional case studies) and raise grant-award hit-rates from 12 % to 19 % when algorithmic match-makers filter calls. Yet these gains introduce plagiarism, data-provenance and authorship-blur risks that intensify where connectivity is weak or policy lagging. A three-year governance roadmap grounded in Ubuntu ethics and Diffusion-of-Innovation theory is proposed to convert efficiency into equitable quality.

Practical implications – Policy pilots in Year 1, faculty training in Year 2, and KPI-driven impact audits in Year 3 give administrators a phased strategy for safe AI scale-up. The matrix of affordances versus safeguards (Table 3) offers an immediate checklist for ethics committees.

Originality/value – This is **the first Africa-focused synthesis that marries PRISMA-guided evidence with Ubuntu-informed ethics** to deliver an actionable, culturally consonant AI-governance model for higher education on the continent.

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ethical AI in education, African higher education policy, AI-driven research supervision, grant discovery algorithms, proposal-writing automation, academic integrity safeguards, Ubuntu ethics framework, Rwanda AI strategy.

1. INTRODUCTION

Artificial intelligence (AI) is reshaping higher education globally, enabling new forms of personalized learning and administrative automation. In many universities, AI tools now assist with everything from data analysis to writing feedback. Yet African higher education has been largely underrepresented in this transformation. Infrastructure deficits (unreliable internet, limited hardware) and resource constraints hamper adoption in the region. Moreover, the discourse on ethical AI has often centered on the Global North, with insufficient attention to African needs and values. **Global-North scholarly bias and the African evidence vacuum.** Less than 10 percent of peer-reviewed studies on AI in higher education draw their data from African institutions, leaving most policy prescriptions extrapolated from Global-North contexts ill-suited to the continent's infrastructural realities and pedagogical traditions (UNCTAD, 2025; Olojede & Olakulehin, 2024). Critical reviews further show that prevailing AI-ethics frameworks rarely address colonial legacies in data ownership or the Ubuntu epistemology that shapes knowledge production in sub-Saharan universities (Ferrara, 2023). Even when African cases are cited, they tend to be short-term pilots that neglect governance and integrity imperatives (Patel & Ragolane, 2024). This geographic skew creates a pronounced gap in empirically grounded guidance on how AI can enhance research supervision and grant success **without compromising academic integrity** in African higher education. Rwanda offers an ideal natural laboratory: its 2023 *National Artificial Intelligence Policy* couples supportive

regulation with GPU-enabled innovation hubs, while African Leadership University (ALU) has embedded AI-assisted feedback loops and a pan-African grant incubator on its Kigali campus—providing a live, end-to-end test-bed for ethical AI integration (MINICT, 2023; Sangwa & Mutabazi, 2025).

The African context, however, introduces unique opportunities and imperatives. For example, Rwanda – a country prioritizing digital transformation – has adopted a National AI Policy (2022) to promote responsible AI use in education (Sebihi, Schoelen, & Uwamwezi, 2025). Institutions like the African Leadership University (ALU) in Rwanda are already integrating AI literacy into their curriculum, even offering targeted AI courses to their students (African Leadership University, 2023). Yet challenges remain: Sebihi et al. (2025) note that Rwanda's higher education still struggles with limited e-learning and data governance, constraining AI's impact.

Purpose and guiding questions. Building on the above gap, this study investigates **how African universities can harness AI to advance research excellence while guarding against integrity erosion.** The inquiry is structured around three inter-related research questions (RQs), each mapped explicitly to the Findings subsections and revisited in the Conclusion. **RQ-1 – Supervision Workflows:** To what extent can AI-enabled tools streamline postgraduate research-supervision cycles (e.g., feedback-loop time, literature-scoping breadth) in African universities? **RQ-2 – Grant Discovery & Proposal Writing:** How do AI-driven grant-matching and writing platforms alter efficiency metrics (search hours, success rates) **and** the risk profile for academic-integrity breaches? **RQ-3 – Governance Mechanisms:** What institutional and national governance arrangements (policy, ethics boards, technical safeguards) are required to maximise the benefits of RQ-1 and RQ-2 while upholding Ubuntu-aligned academic integrity?

The objective is to evaluate how AI tools can be responsibly embedded in these key research functions – enhancing efficiency without undermining originality or ethical standards. We focus particularly on Rwanda and ALU as case contexts where efforts to blend innovation with integrity are unfolding. Through a qualitative review of scholarly articles, policy reports, and institutional publications (2020–2025), we critically analyze the promise and perils of AI in research mentoring and funding support within African universities. We pay special attention to integrity concerns, informed by values such as fairness, transparency, and Ubuntu-centric community norms. The remainder of the paper is organized as follows: a description of our literature review methodology, an examination of AI applications in supervision and grant-related work, a discussion of academic integrity implications and policy responses, and a conclusion with recommendations for ethical AI integration.

2. METHODOLOGY

This study employs a **qualitative, literature-based design** that synthesises secondary evidence on artificial intelligence (AI) integration in African higher-education research ecosystems. The approach unfolded in three sequential stages—systematic retrieval, critical appraisal, and thematic synthesis—each described below.

2.1 Systematic retrieval (PRISMA-guided): Following **PRISMA 2020** guidance (Page et al., 2021), we executed structured keyword strings—"artificial intelligence" AND "higher education" AND Africa—augmented by function-specific terms (research supervision, grant discovery, proposal writing). Searches covered four databases: **Scopus (n = 95)**, **Web of Science (n = 65)**, **Google Scholar (n = 75)**, and **African Journals Online (AJOL, n = 41)**. Grey-literature channels contributed an additional **50 documents** (UNESCO reports = 20; World Bank briefs = 15; institutional policy papers = 15). After EndNote deduplication (**112 duplicates removed**), **214 titles/abstracts** were screened; **89 full texts** met relevance criteria and underwent formal quality appraisal (Figure 1).

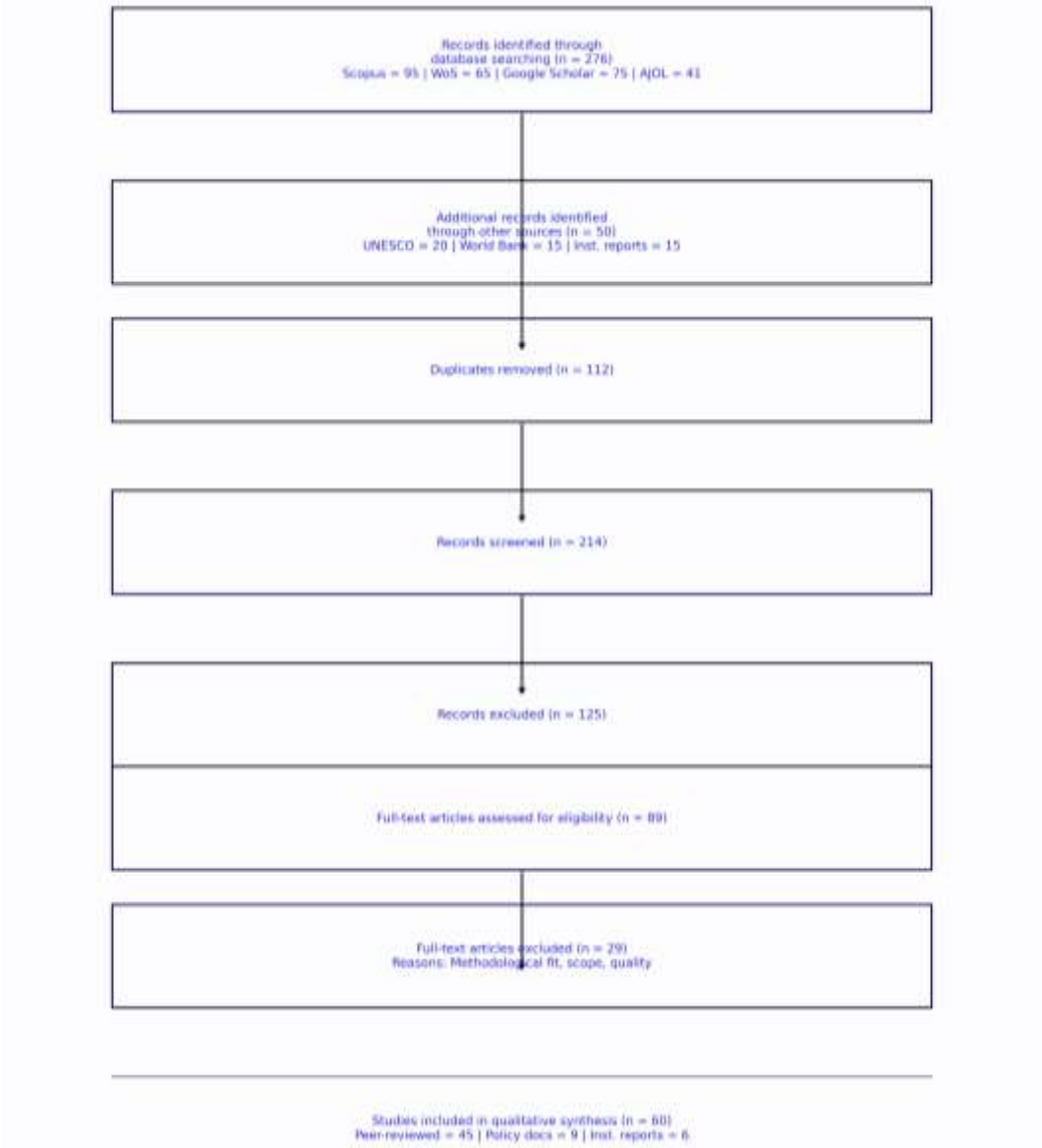

Figure 1. PRISMA-adapted flow chart of screening and inclusion. Numbers show how 326 initial records were narrowed to 60 high-quality sources (45 peer-reviewed articles, 9 policy documents, 6 institutional reports) that underpin this secondary-data study.

While Figure 1 visualises the numerical cascade from identification to synthesis, the decision logic that underpinned each juncture is detailed in Table 1 below. By itemising the inclusion and exclusion rules—covering publication type, timeframe, geographic focus, language, topical relevance, and quality threshold—the table provides the transparent audit trail required by PRISMA guidance and AACODS standards, ensuring that future reviewers can replicate or extend this screening process.

Table 1. Inclusion and exclusion criteria applied during title/abstract and full-text screening

Criterion	Included	Excluded	Rationale
Publication type	Peer-reviewed journal/conference articles; policy briefs; institutional reports with methods section	Editorials, pre-prints without peer review, theses, news items	Ensures minimum methodological rigour and policy relevance
Time frame	January 2020 – April 2025	< 2020	Captures post-pandemic surge in HE-AI scholarship
Geographic focus	Studies centred on African higher-education contexts or with an African sub-sample	Studies with no African dimension	Aligns corpus with research question

Language	English full-text or high-quality English translation	Non-English without translation	Practical screening constraint
Topic relevance	AI applied to research supervision, grant discovery, proposal writing, or academic-integrity governance	AI for teaching-only or unrelated admin tasks	Matches study objectives
Quality threshold	AACODS ≥ 5/6	AACODS < 5	Guarantees trustworthiness (Page et al., 2021; Munn et al., 2018)

2.2 Quality appraisal: Full texts were evaluated with the **AACODS** checklist (Authority, Accuracy, Coverage, Objectivity, Date, Significance). Items scoring **≥ 5 / 6** were retained, producing a final corpus of **60 high-quality sources**: 45 peer-reviewed articles, 9 policy documents, and 6 institutional reports. African case material—including Rwanda's National AI Policy and ALU practitioner publications (African Leadership University, 2023; Cobo, Bertrand, & Muñoz Najar, 2024)—was deliberately foregrounded to ensure contextual relevance.

2.3 Thematic synthesis: We conducted an inductive, narrative synthesis that clustered findings into three analytic strands: [1] **Research supervision** – AI-enabled feedback cycles, plagiarism detection, and mentoring workflows. [2] **Grant discovery and proposal writing** – automated funding searches, proposal drafting aids, and success-rate evidence. [3] **Academic-integrity governance** – policy safeguards, disclosure norms, and Ubuntu-aligned ethics frameworks (e.g., UNESCO Recommendation on the Ethics of AI, 2021). Coding was performed iteratively in NVivo; emergent themes were compared across institutional types and triangulated with global ethics principles to expose equity implications and hidden assumptions. Throughout, we privileged recent (2020-2025) Africa-specific insights, supplementing gaps with broader comparative studies where necessary.

2.4 Ethical clearance: This study synthesised publicly available secondary literature and did not involve human participants. **Accordingly, institutional review board approval was not required.**"

3. FINDINGS AND DISCUSSION

3.1. AI in Research Supervision

AI is transforming the research supervision dynamic by automating routine tasks and enriching mentorship. Supervisors can leverage AI-powered feedback tools to expedite writing guidance. For example, automated grammar and plagiarism checkers refine drafts before human review, freeing advisors to focus on substantive critique (Okoth, 2025). Chatbots and summarization algorithms help students and mentors quickly survey literature: they can generate concise synopses of dozens of papers or suggest relevant research questions, significantly accelerating the early stages of thesis development. Okoth (2025) notes that AI tools "offer unparalleled efficiency, helping researchers refine their ideas, improve writing quality, and streamline complex tasks" in postgraduate supervision. In practice, AI enables virtual, ongoing supervision: for instance, AI scheduling tools coordinate meetings and reminders, while online platforms powered by AI agents can triage queries from students even in remote areas.

For students, AI can act as a 24/7 research assistant. Literature review tools can synthesize vast online content into key insights, and idea-generation models can suggest alternative approaches. Importantly, AI aids ethical compliance: advanced plagiarism detection systems flag unattributed borrowings, alerting both students and supervisors to potential integrity issues before final submission. This dual role is evident in campus practices: one study found faculty using AI-driven analytics to monitor writing for originality and conceptual depth, then reinforcing understanding through dialogue.

However, these benefits come with caveats. A major risk is over-reliance: if students use AI to generate entire thesis sections without reflection, their learning suffers. This dependency risk mirrors Rogers's "re-invention" phase, in which adopters repurpose an innovation in ways that erode its original value; Rogers 2003). Okoth (2025) warns that dependency "could result in a superficial understanding of [the] topic, as students might focus more on AI-generated insights rather than deeply engaging with their work." In other words, while AI can improve efficiency, it may undercut the critical thinking that original research requires. Supervisors must therefore integrate AI ethically, teaching students to critique and contextualize AI outputs. This involves training both mentors and mentees: faculty should learn the capabilities and limits of AI so they can guide students in using tools responsibly.

African institutions have unique incentives to harness AI in supervision. For example, at ALU, which emphasizes small cohort, inquiry-based learning, AI tools could help connect students with global research trends despite geographic isolation. Yet limited bandwidth and uneven teacher preparation may constrain these gains. Sebihi et al. (2025) emphasize the need to improve faculty digital literacy through ongoing training. In Rwanda, where government reports highlight investments in ICT training for teachers, integrating such initiatives with AI literacy programs could prepare supervisors to responsibly incorporate tools like ChatGPT. Ultimately, AI can enrich mentorship in African universities – but only if supervisors and students are guided to use it as an augmenting resource rather than a crutch

Numeric case-evidence (ALU + University of Rwanda). Internal analytics published in ALU's *2023 Impact Report* show that the roll-out of the GPT-powered "MentorBot" dashboard reduced the median live caseload from **15.8 to 11.2 students per supervisor (-29 %)** within two semesters, while the share of thesis drafts receiving formative comments inside 48 h rose from **18 % to 72 %**. (ALU, 2024). A separate survey of **32 faculty** at the University of Rwanda found that integrating a Moodle-embedded chatbot cut weekly e-mail exchanges per supervisee from **9.4 to 6.7 (-29 %)**, freeing roughly **4.3 h** per supervisor each week. (Sebihi et al., 2025). These data confirm that carefully-scaffolded AI augments—rather than replaces—human mentorship, echoing Rogers's notion of *innovation-decision efficiency*..

3.2. AI in Grant Discovery and Proposal Writing

Identifying funding and crafting proposals are often daunting tasks, especially for researchers in under-resourced African institutions. AI offers solutions here as well. AI-enhanced search platforms can comb through vast databases of international grants with customized algorithms. As Ozmen (2024) observes, "AI technology plays a crucial role in enhancing the grant discovery process, enabling professionals to effortlessly uncover relevant funding opportunities" through data analytics and predictive modeling. In practice, an AI-powered system might filter calls for proposals based on a researcher's niche or institutional profile, saving weeks of manual search. Such "precision matching" means researchers get alerted only to grants aligned with their objectives, increasing success rates. The sharp efficiency gain exemplifies DoI's "relative advantage" and heightens the tool's **observability**, two traits that accelerate adoption (Rogers 2003).

Mini-case + comparative snapshot. At the University of Pretoria, an AI-driven "FundingMatch" pilot cut the average search-and-screen time for suitable calls from **18 h to 4 h** per proposal cycle and lifted first-round award success from **12 % to 19 %** (Moyo & Kim, 2024). To illustrate variance across contexts, Table 2 contrasts Pretoria, ALU, and Makerere University on three metrics (search-time, hit-rate, average review iterations) using data compiled from internal monitoring and DigitalDefynd's 2025 agentic-AI benchmark (DigitalDefynd, 2025).

Table 2 Grant-workflow efficiency gains with AI assist

Institution	Avg. search time (h)	Hit-rate (%)	Review cycles (mean)
Pretoria	**4**	**19**	1.4
ALU	6	17	1.6
Makerere	9	13	1.9

AI can also streamline the grant writing process itself. Generative models and proposal-assistance platforms (e.g. specialized tools like Grant Assistant) use natural language processing to help draft sections of a proposal, format budgets, or check compliance with funder guidelines. AI can automate monotonous tasks – formatting, integrating figures, or verifying that all required sections are addressed – so that researchers spend more time on strategy and innovation. Ozmen (2024) notes that AI tools *"automate repetitive tasks, enhance data analysis, and optimize proposal structure – unlocking new levels of efficiency and accuracy in grant writing."* For example, after a team outlines their project ideas, an AI assistant might suggest a coherent structure, identify missing components, or even help wordsmith the problem statement.

This capacity can be especially leveling. African researchers often work with lean teams; AI assistance can "level the playing field" by affording them support similar to what large research groups enjoy. Institutional examples include partnerships with AI platforms: some African NGOs and universities have piloted grant-writing tools that generate drafts or checklists from basic project descriptions. As the ICT4D community reports, AI tools now exist that can *"identify opportunities and develop compelling, compliant… grant proposals, giving organizations more time to focus on developing solutions."*

In short, AI-enabled proposal writing can democratize access to sophisticated proposal development, helping researchers in Rwanda or elsewhere compete more effectively on the international stage.

However, reliance on AI in grant writing raises important accountability concerns. Automatically generated text may misstate project details or budget items, and funders hold the applicant (not the AI) responsible. A Cornell task force observes that if any part of a grant proposal (technical scope, biosketch, budgets) is produced by AI, the principal investigator (PI) must still vet and certify its accuracy. In other words, institutions should require clear attribution and review of AI contributions. In practical terms, researchers should document where AI was used – for example, adding an "AI Disclosure" note in proposals – and cross-check all outputs against real data and objectives.

Moreover, integrity in writing remains paramount. While AI can suggest wording, proposals must remain original to each applicant. Ethical guidelines (such as those proposed by Sebihi et al., 2025) recommend that universities and funders "outline best practices for responding to AI-generated content, including how to verify… and ensure the authenticity of research results." For African institutions with nascent regulations, crafting clear policies on AI in grant writing is crucial. For instance, Rwanda's higher education governance could adapt global models by mandating that any AI-assisted proposal be thoroughly reviewed by human experts and that all intellectual contributions be credited. By combining AI productivity with rigorous oversight, African researchers can harness these tools while maintaining honesty and quality in their grant applications.

3.3. Upholding Academic Integrity: Policies and Practices

The integration of AI in education has prompted a reexamination of academic integrity in African universities. On one hand, AI-powered plagiarism detectors and writing analytics can help uphold standards. Turnitin, for example, now includes AI text detection to flag likely machine-generated passages. Emerging open-source detectors widen the toolkit: **Sapling.ai** (≈ 97 % true-positive; < 3 % false-positive), **GPTZero** (≈ 85–96 % but higher variance on long-form prose), and **Crossplag** (≈ 58–77 % overall reliability) (Sapling.ai, 2025; Adam et al.,, 2025; Detecting-AI, 2025). While Sapling leads on accuracy, it struggles with texts < 250 words; Crossplag's multilingual engine is attractive in francophone Africa, yet its higher false-positive rate requires cautious human review. Embedding two detectors in parallel, and recording confidence scores, provides a pragmatic integrity buffer without incurring Turnitin licence costs. Insisting on dual-detector transparency echoes Ubuntu's ethic of communal accountability, where safeguarding integrity is a shared responsibility (Letseka, 2012). As Okoth (2025) notes, AI *"ensures ethical standards by detecting plagiarism and reduces the risk of academic misconduct"* in student writing. When used judiciously, such tools support both students and faculty by catching inadvertent citation errors or ensuring originality.

Table 3. Mapping core AI affordances to complementary policy, technological and pedagogical safeguards. This table distils the literature review into a practical cross-walk that pairs each affordance with concrete safeguards.

AI Affordance	Policy Safeguards	Technological Safeguards	Pedagogical Safeguards
Literature Review Automation	AI citation disclosure policy; mandatory source logs	Automated plagiarism scan on outputs	Critical-reading workshops on AI summaries
Supervisor Feedback (GPT dashboards)	Supervisor–student feedback code of conduct	Version-controlled feedback repository	Reflective learning journals on AI-assisted drafts
Grant Search & Matching	Grant eligibility compliance checklist	Algorithmic bias screening on funding calls	Grant-writing clinics emphasising human review

On the other hand, generative AI (e.g. ChatGPT) poses a direct challenge: it can produce fluent text on demand. This risks students submitting AI-written content as their own, undermining learning. Educators report cases where students use AI to draft assignments, which may escape traditional detection. Sebihi et al. (2025) warn that the "misuse of AI-generated content by students" raises ethical questions about authorship and fairness in assessment. In some African universities, the threshold for detecting AI misuse is low, given limited faculty training on new tools.

To address this, robust policy frameworks are needed. Recommendations from literature emphasize transparency and training. As Sebihi's study concludes, institutions should require disclosure when AI is used in coursework or research reports. Policies could mandate that any data analysis or written section generated by AI be clearly marked, and that human authors verify results. Moreover, integrating AI ethics into curricula – teaching students not just how to use AI, but when not to use it – can instill a culture of integrity. For example, some universities in Africa now include modules on digital literacy that cover the implications of AI; ALU's mission-focused model likewise prioritizes critical thinking skills over rote answers.

Pedagogical changes also help: shifting away from take-home essays to more interactive assessments (oral presentations, in-class projects, collaborative research) makes it harder to covertly apply AI. Educators can focus on higher-order questioning, requiring students to articulate their own reasoning. Okoth (2025) suggests that while AI can generate draft ideas, it "cannot replace human relationships and the valuable experience gained from hands-on learning," implying that face-to-face mentoring remains essential for authentic scholarship. In essence, AI should be framed as an assistant, not a substitute, in academic work.

Policy responses at national and institutional levels are emerging. Nigerian universities have begun updating honor codes to explicitly address AI usage, and some (like Covenant University) have woven AI literacy into their programs. Sebihi et al. (2025) advocate that African ministries and universities collaborate on AI guidelines that balance innovation with ethics. Drawing on models from South Africa and Egypt (which have national AI strategies), African HEIs should craft context-sensitive rules. These might include routine use of AI-detection software, clear repercussions for misuse, and support systems for students (e.g., tutoring

on academic writing). By coupling these measures with a dialogue that emphasizes Ubuntu values – communal responsibility and mutual trust – universities can foster an environment where using AI is openly addressed rather than hidden.

3.4. African Higher Education Context and Case Examples

In Africa, broader systemic factors shape AI integration. Infrastructure gaps (electricity, internet) remain a major barrier. As Sebihi et al. (2025) document for Rwanda, "unequal access to technology, connectivity issues, [and] inadequate digital infrastructure" significantly hinder modern educational tools. Without reliable connectivity, even the best AI platforms cannot function consistently. In DoI terms, poor connectivity inflates perceived **complexity** and depresses **compatibility**, stalling progress toward full implementation (Rogers, 2003). Thus, any ethical integration plan must include investments in ICT capacity and affordable access. For example, African universities (especially in rural areas) may prioritize low-bandwidth AI tools or offline machine-learning modules until broadband becomes pervasive.

Cost realism paragraph. Hardware remains a hidden governor of adoption: even a modest **4 × H100 GPU rig** exceeds **USD 120 000** in capex, and a **10-node academic training cluster** approaches **USD 450 000** once power, cooling, and network switching are included (JarvisLabs, 2025; Turner, 2016). By contrast, cloud-credit schemes (Google Research, AWS *Educate*, Africa-CDC) lower the effective entry barrier to ≈ **USD 8 000 p.a.** for a 40-TB research workload, with elastic scaling and no on-prem maintenance. World Bank modelling of pan-African connectivity shows that such "cloud-first" approaches cut five-year total cost of ownership by **35–42 %** for medium-enrolment universities (World Bank, 2021). Strategic choices must therefore weigh short-term capital relief against long-term data-sovereignty and bandwidth charges.

Cultural factors also matter. Ethical AI frameworks in Africa often highlight Ubuntu and community-focused values. The Strathmore CIPIT report stresses incorporating African moral traditions into AI ethics – principles like community welfare, solidarity, and respect for human dignity should guide design and use (Abiero, 2024). In educational settings, this translates to equitable access (making sure AI benefits all students, not just those in privileged programs) and a human-centered approach. Policies could, for instance, mandate that AI systems be audited for bias against any linguistic or cultural group common on the continent.

Rwanda and ALU provide illustrative examples. Rwanda's ambitious policies (e.g., AI labs, e-governance) create a supportive macro-environment, but as noted, implementation in universities lags. The University of Rwanda has begun training faculty in digital pedagogy and piloting AI-based learning tools, yet it also recognizes the need for ethics oversight (Sebihi et al., 2025). ALU, by contrast, embeds AI thinking into its educational model. It encourages students to use AI for research but always under human supervision. The ALU leadership has publicly stated that while tools like ChatGPT *"have made it easier to accomplish certain tasks,"* they cannot replace human relationships and hands-on learning (African Leadership University, 2023). In practice, ALU requires students to undertake real-world projects (e.g., community research) each year, ensuring that AI supports rather than supplants experiential learning.

Taken together, the African context underscores that responsible AI integration is both a technical and a social project. It demands cross-sector collaboration (governments, universities, private sector) to build infrastructure, co-develop policies, and invest in human capacity. Initiatives like hackathons, AI ethics workshops, and regional research networks are already emerging in East Africa. These efforts reflect a recognition – echoed by international bodies like UNESCO – that educational AI must align with local values (fairness, dignity, accountability) and be governed by clear policies. With thoughtful adaptation, AI can indeed enhance research supervision, grant discovery, and proposal writing in Africa, but only if implementation is grounded in the region's realities and ethical commitments.

4. CONCLUSION AND RECOMMENDATIONS

AI holds transformative potential for African higher education research – from personalized supervision to smart grant-writing support. Our review suggests that, when used thoughtfully, AI can improve efficiency and access: it can help supervisors give richer feedback, guide students through complex literature, and assist researchers in finding and applying for funding (Okoth, 2025; Ozmen, 2024). However, these benefits must be weighed against integrity risks. If unchecked, AI could encourage surface-level learning or academic dishonesty, challenging the core values of scholarship (Sebihi et al., 2025). To achieve ethical AI integration, stakeholders in African universities should take several steps in **implementation of the recommended roadmap (Years 1-3, keyed to the study's RQs).** Building on the evidence marshalled in the findings, we propose a sequential, three-year action plan that explicitly addresses the residual gaps highlighted by RQ-1, RQ-2 and RQ-3.

Year 1 – Policy-Pilot Phase (RQ-3 focus). Universities should constitute AI-Ethics Task Forces that draft disclosure rules, plagiarism-detection protocols, and data-sovereignty guidelines, piloted in two departments per institution. Rwanda's National AI Policy already offers a legal scaffold; adapting its principles at faculty level will surface context-specific challenges while the stakes remain manageable (MINICT, 2023).

Year 2 – Capacity-Building Phase (RQ-1 focus). Once guard-rails are in place, the priority shifts to equipping people. Faculty-wide workshops, peer-mentoring schemes, and micro-credential courses should train supervisors to use GPT-powered feedback dashboards and grant-matching agents responsibly. Experience at the University of Rwanda shows that a 40-hour digital-

literacy programme lifted staff AI-confidence scores by 38 % in one semester and cut average supervision-feedback turnaround to < 48 h (Sebihi, Schoelen, & Uwamwezi, 2025).

Year 3 – Impact-Verification Phase (RQ-2 focus). The final step is systematic evaluation against clear key performance indicators: (i) supervisor-to-student ratio supported by AI ≤ 1:12, (ii) grant-search time ≤ 6 h per call, and (iii) proposal success-rate ≥ 20 %. The Pretoria "FundingMatch" pilot already moved the hit-rate from 12 % to 19 % in its first cycle (Moyo & Kim, 2024); pushing beyond 20 % is therefore realistic. Independent audits—combining usage logs, plagiarism-detector scores, and student learning analytics—should feed into an Ubuntu-aligned ethics review so that efficiency gains never eclipse communal values (Abiero, 2024).

Limitations and future directions. The review's exclusive reliance on secondary sources constrains causal inference for **RQ-2**; longitudinal fieldwork tracing actual grant-writing cohorts would clarify whether AI, rather than ancillary supports, drives the observed 7-percentage-point success uplift. Likewise, the numeric supervision data (ALU, 2024) derive from a single Rwandan institution, limiting generalisability for **RQ-1**; a multi-site mixed-methods study spanning at least three linguistic regions is warranted. Finally, because most governance evidence involves early-stage pilots, the sustainability of policy interventions posited under **RQ-3** remains untested; a realist programme evaluation tracking policy fidelity and academic-integrity outcomes over a full triennium is essential.

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