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Unequal AI Readiness: Why Digital Inequality Matters for Governing Generative AI in African Universities

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1. The Policy Problem

Generative artificial intelligence (GenAI) is moving into African higher education faster than many universities can develop coherent rules for its use. Students and staff are already using systems such as ChatGPT and related tools for writing, research, feedback, coding, information retrieval, and problem-solving. Across African higher education, the emerging evidence points to substantial interest in GenAI alongside concerns about academic integrity, accuracy, privacy, overreliance, assessment, and institutional preparedness (Apata et al., 2026). The policy challenge is therefore no longer whether universities will encounter GenAI, but whether they can govern its use in ways that are educationally meaningful, accountable, and equitable.

This challenge is often framed through the language of AI readiness: whether an institution has infrastructure, policies, skills, governance arrangements, and organizational capacity to adopt AI responsibly. That framing is useful but incomplete. Universities do not become AI-ready in a social vacuum. They operate within unequal digital environments in which students and staff differ in connectivity, devices, data affordability, access to advanced AI services, digital and AI literacy, and opportunities for institutional support. Digital inequality is therefore not merely a student-access problem sitting alongside AI governance. It is a condition that can shape the institution's capacity to govern GenAI responsibly.

The central policy argument of this contribution is that institutional AI readiness should be evaluated through a digital-equity lens. A university may publish an AI policy or provide access to selected tools while substantial groups of students remain unable to participate on comparable terms. Conversely, widespread student use does not demonstrate institutional readiness. Responsible adoption requires the alignment of material access, human capabilities, pedagogy, assessment, governance, and support.

2. The Missing Dimension: Digital Inequality

Digital inequality scholarship has long shown why access alone is an inadequate measure of technological inclusion. Inequalities persist after technologies become available through differences in the quality and autonomy of access, skills, patterns of use, and the benefits people can derive from technology (DiMaggio et al., 2004; van Dijk, 2020; Warschauer,

2003). GenAI makes this distinction especially important because nominal access can be deceptively easy. A student with a smartphone may technically access a generative AI service, yet that tells us little about the reliability of connectivity, the cost of sustained use, the functionality available on a free tier, the suitability of the device for academic work, or the student's capacity to evaluate generated outputs.

Recent African evidence shows that GenAI participation is already differentiated. In Ghana, Kwakye et al. (2025) found significant differences in GenAI use by gender, age, and programme of study. In Nigeria, Iliyasu et al. (2025) found that ChatGPT engagement among medical and allied-health students varied with gender, age, year of study, knowledge, and attitudes, while students also reported concerns about errors, ethics, dependency, and infrastructure. In Tanzania, Kigobe et al. (2026) found different literacy profiles among students and instructors: students reported greater experience, use, skills, and openness, while instructors reported stronger knowledge. These findings caution against treating adoption rates as evidence of equal participation.

Digital inequality also includes unequal access to the capabilities of AI systems themselves. Free and paid versions may differ in usage limits, model performance, document analysis, multimodal functions, and other features. Students with greater economic resources can therefore obtain not only more reliable connectivity but potentially more capable AI assistance. If universities encourage GenAI-supported learning without examining these differences, they may inadvertently embed socioeconomic inequality into teaching and assessment.

The relevant policy question is thus not simply whether students can reach an AI system. It is whether they have effective access: reliable, affordable, sufficiently capable, and educationally usable access that allows them to participate without disproportionate cost or disadvantage.

3. Rethinking Institutional AI Readiness

Institutional readiness is commonly associated with infrastructure, technical capacity, policies, staff skills, and governance. For responsible GenAI adoption, however, these elements need to be understood as an interconnected socio-technical system rather than a checklist. UNESCO's AI Readiness Assessment Methodology similarly treats readiness as multidimensional and dynamic, encompassing regulatory, social, educational, economic, and technological or infrastructural dimensions (UNESCO, 2023). Although that framework operates at the national level, the underlying principle applies to universities: readiness is not equivalent to possession of technology.

Emerging evidence from Ghana makes this point concrete. Dzidzornu and Xu (2026), examining students and faculty across 30 higher education institutions, found that resource

constraints were negatively associated with institutional readiness while technological governance architecture was positively associated with readiness. Their analysis incorporates power instability, data costs, bandwidth constraints, policy formalization, technical support, ethical frameworks, and monitoring mechanisms. This is important because it connects what are sometimes treated as separate debates - infrastructure on one side and responsible AI governance on the other.

A digitally equitable conception of institutional readiness therefore has at least five dimensions. First is material readiness: electricity, connectivity, devices, platforms, affordability, and technical support. Second is human-capability readiness: AI literacy among students, faculty, administrators, and support staff. Third is pedagogical readiness: curriculum design, faculty development, assessment practices, and clarity about appropriate educational use. Fourth is governance readiness: policies for acceptable use, transparency, privacy, data protection, intellectual property, accountability, procurement, and oversight. Fifth is equity readiness: the institution's capacity to identify who is excluded or disadvantaged by AI-enabled practices and to adapt provision accordingly.

These dimensions are mutually dependent. Strong policies cannot compensate for unreliable infrastructure. Infrastructure alone cannot ensure critical or responsible use. AI-literacy training cannot solve unequal access to devices or paid tools. Assessment reform will have limited legitimacy if students face unequal opportunities to use the technologies being incorporated into coursework.

4. How Digital Inequality Shapes AI Readiness

Digital inequality shapes AI readiness through at least three mechanisms. The first is resource asymmetry. Where students and institutions face high data costs, unstable electricity, weak connectivity, or limited computing resources, the practical conditions for sustained GenAI use are unequal. Universities may then rely on students' private resources to make institutional AI strategies work. This shifts the costs of digital transformation from the institution to learners and can make nominally universal policies unequal in practice.

The second mechanism is capability asymmetry. Responsible GenAI use requires more than prompt-writing. Learners and staff need to understand system limitations, verify outputs, identify hallucinations, evaluate sources, recognize bias, protect sensitive information, and make judgments about authorship and appropriate use (Long & Magerko, 2020; Ng et al., 2021). Yet opportunities to acquire these competencies are uneven. Kigobe et al. (2026) demonstrate that experience, use, skills, knowledge, and attitudes do not develop uniformly. An institution that permits or promotes GenAI without building these capabilities may expand exposure faster than responsible competence.

The third mechanism is governance asymmetry. Institutions differ in their capacity to develop policies, provide technical support, redesign assessment, monitor emerging risks, negotiate technology procurement, and protect student data. Dzidzornu and Xu (2026) show that governance capability is associated with institutional readiness in Ghanaian higher education. This means that the universities facing the greatest resource constraints may also have the least capacity to develop sophisticated AI governance, potentially widening institutional differences as GenAI adoption accelerates.

These mechanisms interact. A student with limited connectivity may have fewer opportunities to experiment with GenAI and develop literacy. A resource-constrained university may have less capacity to provide training or licensed access. Faculty working without clear guidance may respond by either prohibiting GenAI or tolerating opaque use. Students with greater private resources can then compensate through better connectivity, paid tools, or external learning opportunities, while others cannot. Digital inequality can therefore become institutionalized through AI-enabled education even where the technology itself is widely available.

This interaction also explains why responsible AI governance cannot be reduced to risk management. A policy can be formally responsible yet distributively unfair. For example, requiring students to disclose GenAI use may improve transparency, but if assignments implicitly assume access to advanced AI tools, disclosure does not address unequal opportunity. Similarly, prohibiting GenAI may appear administratively simple but may be difficult to enforce and may disadvantage students who would benefit from legitimate accessibility or learning support. Responsible governance must therefore consider not only safety and integrity but also the distribution of capabilities and burdens created by institutional choices.

The central shift is from asking whether an institution is ready to adopt AI to asking whether it is ready to govern AI under conditions of inequality. That is a more demanding standard. It requires universities to examine how digital resources, human capabilities, pedagogical arrangements, and governance interact, and whether these arrangements expand or constrain equitable participation.

5. Institutional Readiness and Digital Equity Framework

A practical response is an Institutional Readiness and Digital Equity Framework that places equity inside, rather than beside, AI readiness. The framework can be used as a diagnostic tool before universities scale GenAI initiatives or introduce institution-wide rules.

Dimension	*Core question*	*Illustrative indicators*

Effective access	Can students and staff use GenAI reliably and affordably?	Connectivity; electricity; devices; data costs; access to appropriate AI functionality; technical support
AI capability	Can users engage critically and responsibly?	AI/GenAI literacy; verification; hallucination awareness; privacy; ethical judgment; disciplinary application
Pedagogical readiness	Is GenAI integrated around learning rather than convenience?	Faculty development; curriculum alignment; assessment redesign; student guidance; accessibility
Governance readiness	Are rules and accountability mechanisms coherent?	Acceptable-use policy; disclosure; data protection; procurement; intellectual property; oversight; monitoring
Digital equity	Who benefits, who bears costs, and who may be excluded?	Distributional impact; socioeconomic differences; gender/disability/language considerations; remediation and support

The framework changes the unit of evaluation. Instead of asking only whether an institution has an AI strategy, it asks whether the institution can make that strategy work equitably. Readiness is demonstrated when infrastructure, capabilities, pedagogy, and governance jointly enable meaningful participation. Digital equity functions as a cross-cutting test across all four other dimensions.

This approach also discourages one-size-fits-all benchmarking. African universities differ substantially in resources, mandates, student populations, disciplines, and national regulatory environments. The purpose is therefore not to rank institutions against a single technological ideal, but to identify where institutional arrangements create avoidable inequalities and what capacities must be strengthened before AI use is scaled.

6. Policy Priorities

Measure effective access, not platform availability. Institutional audits should assess connectivity reliability, device access, affordability, functionality differences, and who bears the costs of AI-enabled learning.

Make AI literacy a core institutional capability. Universities should embed critical evaluation, verification, ethics, privacy, authorship, and discipline-specific AI use into curricula, faculty development, libraries, and academic support.

Align governance with pedagogy and assessment. AI policies should be developed alongside assessment redesign and teaching guidance so that rules support legitimate learning rather than relying primarily on prohibition or detection.

Conduct equity impact checks before scaling AI initiatives. Institutions should identify which groups may be disadvantaged by access requirements, paid features, language constraints, disability barriers, or assumptions about prior digital competence.

Build shared governance capacity. Governments, university networks, regulators, and regional bodies should support resource-constrained institutions through shared guidance, training, procurement expertise, and context-sensitive governance resources.

7. Conclusion

African universities need AI governance that recognizes inequality as part of the readiness problem rather than as an external social issue. GenAI may be widely accessible while the capabilities required to benefit from it remain unequally distributed. Institutional readiness should therefore be judged by whether universities can align effective access, human capabilities, pedagogy, governance, and equity. The central policy test is not simply whether universities can adopt GenAI, but whether they can govern it in ways that allow students and staff to participate meaningfully, safely, and on equitable terms.

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