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Article

Decolonizing African Curricula Through AI-Enhanced Pedagogy: Reclaiming Indigenous Knowledge and Future Skills in Postcolonial Education Systems

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Abstract

This paper explores the intersection between artificial intelligence (AI) and curriculum decolonization in sub-Saharan Africa, arguing for a transformative educational paradigm that integrates indigenous knowledge systems with AI-enhanced learning. As African nations grapple with postcolonial curriculum models rooted in Eurocentric frameworks, the emergence of AI offers an unprecedented opportunity to reimagine pedagogical tools that honor cultural identity while preparing learners for the demands of a digital future. Through a critical review of literature and analysis of current curriculum practices, this study proposes an Afrocentric-AI curriculum model grounded in contextual relevance, epistemic justice, and future-ready competencies. The implications for curriculum reform, teacher training, and educational policy are discussed, with practical recommendations for implementation.

Keywords: decolonization; artificial intelligence in education (AIED); indigenous knowledge; afrocentric curriculum; postcolonial education; educational technology; Sierra Leone; curriculum reform

1. Introduction

Postcolonial African education systems remain deeply entangled in Eurocentric curricular frameworks, often marginalizing indigenous knowledge and epistemologies (Odora Hoppers, 2000; Dei, 2014). In recent years, calls for curriculum decolonization have intensified, driven by the need to make education more inclusive, context-sensitive, and empowering. Simultaneously, the advent of artificial intelligence (AI) in education—through tools like adaptive learning systems, language processing, and intelligent tutoring—presents both a challenge and an opportunity. This paper explores how AI can serve as a bridge rather than a barrier in the decolonization of African curricula.

2. Literature Review

2.1. The Postcolonial Curriculum Problem

Many African countries continue to operate educational systems designed during or after colonial rule. These curricula prioritize Western knowledge and marginalize African cultural, historical, and linguistic knowledge (Shizha, 2005; Ndlovu-Gatsheni, 2013). This has led to what scholars call "epistemicide" – the killing of indigenous ways of knowing (de Sousa Santos, 2014).

2.2. Decolonizing Education

Decolonizing education involves the dismantling of epistemic hierarchies and the revalidation of local knowledge, languages, and cultural heritage (Chilisa, 2012). It also requires a critical

pedagogy that empowers students to challenge dominant narratives and become agents of transformation (Freire, 1970).

2.3. Artificial Intelligence in Education (AIED)

AI is transforming education globally by enabling personalized learning, automating assessments, and expanding access to knowledge (Holmes et al., 2021). However, most AI tools are developed within Global North contexts and reflect Western pedagogical assumptions (Cruz et al., 2023).

3. Problem Statement

While African educators seek to decolonize education, the rapid adoption of AI technologies risks reinforcing the very Eurocentric paradigms they seek to dismantle. Without intentional design, AI in African classrooms could become a digital colonizer, encoding biases, excluding indigenous content, and standardizing knowledge delivery.

4. Methodology

This paper adopts a conceptual and analytical approach, drawing from existing literature, African curriculum frameworks, and select case studies of AI deployment in education in sub-Saharan Africa. The analysis is informed by postcolonial theory, critical pedagogy, and Afrocentric curriculum theory.

5. Towards an Afrocentric-AI Curriculum Model

5.1. Centering Indigenous Knowledge

An Afrocentric-AI curriculum must recognize oral traditions, folklore, proverbs, local history, and indigenous science as legitimate forms of knowledge (Semali & Kincheloe, 1999). AI tools such as natural language processing (NLP) can be trained to digitize and preserve oral histories in local languages.

5.2. Contextualizing AI Algorithms

African education ministries must invest in AI tools built with African datasets and pedagogical inputs. For instance, language learning platforms should include African languages like Krio, Yoruba, and Swahili, not just French or English.

5.3. Teaching Future Skills Through Local Lenses

Critical thinking, coding, and data literacy must be taught using African contexts and problems. Instead of generic examples, students could use AI to solve real issues in agriculture, public health, or local governance.

5.4. Ethical and Cultural Safeguards

Ethical AI use in African education must respect communal values, spiritual knowledge systems, and data sovereignty. Policies must ensure that local communities have a say in how AI tools are developed and used.

6. Implications for Policy and Practice

- Ministries of Education should create **national AI curriculum task forces** with educators, linguists, tech developers, and cultural scholars.
- Teacher training institutions must integrate both **decolonial pedagogy and AI literacy**.

- International partners should support **local AI innovation** rather than impose pre-made foreign solutions.
- Education technology procurement should prioritize **tools adaptable to African contexts**.

7. Conclusion

African education stands at a crossroads. The choice is not between tradition and technology, but between dependency and design. By intentionally integrating AI with decolonial curriculum reforms, African nations can forge a new pedagogical path—one that honors their past, responds to the present, and prepares for a radically different future.

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Short Biography of Author

Emmanuel Dumbuya holds a Master of Education (M.Ed.) in Curriculum Development from Njala University, Sierra Leone, and has completed an MPhil in Education (Curriculum Development), Njala University-awaiting graduation. Emmanuel Dumbuya is a curriculum specialist, researcher, and educational reformer with over a decade of experience in curriculum development, teacher training, and education policy. His scholarly work focuses on inclusive education, gender equity, and the integration of future skills and technology in African education systems. Emmanuel is the author of over 30 academic books and more than 60 peer-reviewed articles. He is a leading voice in the decolonization of curriculum and a pioneer of the ODUMZ Framework for African education transformation.

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