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Redefining educational leadership in the era of artificial intelligence: Opportunities and ethical imperatives within Kenya's competency-based education

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Abstract

Artificial Intelligence (AI) is transforming education systems globally, reshaping leadership practices, governance structures, and decision making processes. International frameworks highlight AI's potential to personalize learning and improve efficiency (UNESCO, 2021; OECD, 2023), yet adoption remains uneven. Regional studies show persistent challenges: in Kenya, leadership preparedness and ethical safeguards are limited (Wainaina & Sun, 2025); in Uganda, inequities in ICT infrastructure constrain progress (Arinaitwe & Asiimwe, 2026); and in South Africa, unresolved issues of privacy and equity persist (Cross & Feldman, 2025). These findings underscore the decisive role of leadership and governance in shaping AI's educational impact. In Kenya, these challenges intersect with the transition to Competency Based Education (CBE), which emphasizes personalized learning pathways, competency mastery, and data informed tracking of learner progress (Ministry of Education, 2023). While these priorities align closely with AI driven capabilities such as adaptive learning and predictive analytics, integration remains fragmented and insufficiently guided by coherent policy and leadership frameworks. This study adopts a qualitative conceptual approach, drawing on policy documents, global frameworks, and recent literature through thematic analysis. Grounded in Transformational and Distributed Leadership theories alongside AI governance perspectives, the analysis reveals that governance gaps, limited AI literacy, and disparities in digital infrastructure constrain effective integration. By situating Kenya's experience within both global debates and regional realities, the paper contributes a leadership centered perspective to AI integration. It proposes policy interventions including a national AI governance

framework, integration of AI competencies in leadership training, and investment in equitable digital infrastructure. Strengthening leadership and governance emerges as critical for ensuring inclusive, ethical, and sustainable AI driven transformation in Kenya's CBE system.

Key terms: Educational Leadership, Artificial Intelligence, Governance, Competency-Based Education, Digital Transformation, Policy Innovation, Ethical AI

1.0 INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) is reshaping education systems worldwide, influencing teaching, learning, assessment, and administrative processes. Globally, AI-powered technologies are increasingly adopted to support data-driven decision-making, personalize learning experiences, and improve institutional efficiency, with growing evidence of their potential to enhance learner outcomes and system performance (UNESCO, 2021; World Bank, 2022). These developments are not only technological but also structural, requiring a re-examination of educational leadership roles, governance frameworks, and institutional readiness.

Across both developed and emerging education systems, however, integration remains uneven. While countries such as Singapore and Finland have established clear AI strategies in education, others continue to experience fragmented adoption, limited regulatory frameworks, and inadequate preparedness among educational leaders (OECD, 2023). Regional studies reinforce this unevenness: Wainaina and Sun (2025) highlight gaps in leadership readiness in Kenya; Arinaitwe and Asiimwe (2026) show that inequities in ICT infrastructure constrain Uganda's progress; and Cross and Feldman (2025) report unresolved privacy and equity challenges in South Africa. Together, these findings demonstrate that leadership and governance capacity are decisive in determining whether AI enhances or undermines educational transformation.

In Kenya, these global and regional trends intersect with a major education reform—the transition to the Competency-Based Education (CBE) system. CBE emphasizes **personalized learning pathways, competency mastery, and data-informed tracking of learner progress,** all of which align closely with AI-driven capabilities such as adaptive learning systems and predictive analytics. Yet, despite these synergies, AI integration within Kenya's education system remains at an early and uneven stage, reflecting broader systemic challenges related to infrastructure, policy guidance, and leadership preparedness.

Educational leaders are therefore no longer confined to traditional administrative roles but are increasingly expected to adopt data-informed, adaptive, and innovation-driven practices. They must interpret digital data systems, guide technology integration in teaching and learning, and ensure that emerging tools such as AI are used ethically and effectively. However, as regional evidence shows, the pace of technological advancement continues to outstrip the development of corresponding governance frameworks and leadership capacities.

This creates a critical gap between the transformative potential of AI and the readiness of education systems to harness it effectively within the framework of Competency-Based Education. Addressing this gap requires a shift from viewing AI as merely a technological innovation to understanding it as a leadership and governance challenge.

This paper therefore examines how educational leadership is being redefined in the era of Artificial Intelligence within Kenya's Competency-Based Education system. It explores the evolving roles of educational leaders in AI-enabled environments, interrogates existing governance and policy gaps, and considers the capacity development needs of leaders as they navigate increasingly data-driven and

technology-mediated contexts. The paper argues that effective integration of AI depends not only on technological adoption, but also on strong leadership, coherent governance frameworks, and sustained capacity development. By situating Kenya's experience within both global debates and regional realities, it offers context-sensitive policy insights to support more ethical, inclusive, and effective AI integration in education.

1.1 Statement of the Problem

The integration of Artificial Intelligence (AI) into education systems is accelerating globally, offering new possibilities for improving decision-making, institutional efficiency, and learner outcomes. Yet, despite these advances, adoption remains uneven, particularly in emerging education systems where leadership and governance frameworks have not kept pace (UNESCO, 2021; OECD, 2023). This unevenness has resulted in fragmented implementation, raising concerns about accountability, coordination, and ethical use.

Regional evidence reinforces these challenges. In Kenya, Wainaina and Sun (2025) highlight gaps in leadership preparedness and ethical safeguards in AI adoption. In Uganda, Arinaitwe and Asiimwe (2026) show that inequities in ICT infrastructure and limited institutional support constrain effective integration. Similarly, Cross and Feldman (2025) report that South Africa's rapid uptake of AI continues to face unresolved issues of privacy, equity, and governance. These studies collectively demonstrate that while AI holds transformative potential, its impact is shaped by the strength of leadership structures, governance frameworks, and institutional capacity.

In Kenya, these global and regional challenges are unfolding within the ongoing transition to the Competency-Based Education (CBE) system (MOE, 2023). CBE emphasizes personalized learning pathways, competency mastery, and data-informed tracking of learner progress—areas that align closely with AI-driven capabilities such as adaptive learning systems and predictive analytics. However, many institutions are introducing digital tools without clear policy direction or sufficient leadership preparedness. This disconnect is exposing gaps between reform intentions and implementation realities.

Several issues contribute to this situation: limited policy guidance on AI integration in educational leadership, inadequate capacity among leaders to interpret and apply AI-driven data, weak governance structures for transparency and accountability, and disparities in digital infrastructure across regions. Concerns around data privacy, algorithmic bias, and decision-making responsibility add further complexity.

Taken together, these challenges point to a deeper misalignment between the growing expectations of an AI-enabled education system and the current state of leadership and governance within Kenya. Although existing studies highlight the potential of AI in education, there remains limited context-specific analysis of how educational leadership can actively guide its integration within the CBE framework. This study responds to that gap by examining how leadership roles, governance structures, and capacity development imperatives are being redefined in the era of AI, and by proposing strategies to support ethical, inclusive, and effective implementation in Kenya's education system.

2.0 LITERATURE REVIEW

2.1 Artificial Intelligence in Education

Globally, Artificial Intelligence (AI) is transforming education through adaptive learning systems, predictive analytics, and automated administrative processes (Holmes, Bialik, & Fadel, 2019). These technologies promise efficiency and personalized learning experiences at scale, yet they also introduce

complex ethical and pedagogical challenges. UNESCO (2021) cautions that without robust governance frameworks, AI systems risk reinforcing inequalities through algorithmic bias, opaque decision-making, and unequal data representation. This duality underscores that technological advancement alone is insufficient; effective integration depends on leadership capacity to interpret, regulate, and ethically deploy AI within educational institutions.

2.2 Educational Leadership in the Digital Era

Educational leadership in the digital age is increasingly defined by the ability to manage change, integrate technology, and foster innovation. OECD (2023) emphasizes that leaders must develop competencies in data literacy, digital strategy, and collaborative problem-solving. However, many leaders remain anchored in traditional hierarchical models, creating a mismatch between technological advancement and leadership preparedness. Comparative studies from Sub-Saharan Africa reinforce this concern. For example, the World Bank (2022) found that while digital transformation improves learning outcomes, leadership readiness remains uneven across contexts.

Similarly, Wainaina and Sun (2025), in a survey of 137 educators across Kenyan universities, revealed that perceived usefulness strongly predicts willingness to adopt AI, but ethical concerns and limited institutional support constrain uptake. These findings highlight that leadership capacity—not technology alone—determines the success of AI integration.

2.3 Governance and Ethical Considerations

The integration of AI raises critical governance concerns, particularly around data protection, accountability, and transparency. UNESCO (2021) highlights the need for ethical AI frameworks that safeguard against algorithmic discrimination and ensure human oversight. In education, these concerns are amplified due to the sensitivity of learner data and the long-term implications of automated decision-making. Effective leadership must therefore extend beyond administrative control to include ethical stewardship of digital systems, ensuring that AI applications align with educational values and learner protection principles.

Regional studies reinforce this imperative: Arinaitwe and Asiimwe (2026), examining 420 teachers in Uganda, found that institutional support and ICT infrastructure were decisive in shaping readiness, while inequities in access threatened fairness. Likewise, Cross and Feldman (2025) reported that South African schools are rapidly adopting generative AI tools, but unresolved issues of privacy, equity, and governance risk undermining their potential.

2.4 The Kenyan Education Context

Kenya’s transition to Competency-Based Education (CBE) provides fertile ground for AI integration, given its emphasis on personalized learning pathways, competency mastery, and data-informed tracking of learner progress. However, infrastructural constraints, uneven digital access, and leadership capacity gaps limit the pace and equity of adoption. While reforms led by KEMI, the Ministry of Education, and the Teachers Service Commission have begun to address these challenges, empirical evidence on AI integration in Kenyan schools remains limited.

Wainaina and Sun’s (2025) study underscores that educators recognize AI’s instructional potential but remain cautious about ethical implications and institutional readiness. This resonates with broader East African findings (Arinaitwe & Asiimwe, 2026), which show that readiness is uneven and highly dependent on infrastructure and leadership support. Together, these studies emphasize that Kenya’s leadership must prioritize governance frameworks and ethical safeguards to ensure AI contributes to equitable educational transformation.

2.5 Synthesis

The literature reveals both opportunities and risks in AI integration. International scholarship demonstrates AI's potential to personalize learning and improve efficiency, while simultaneously warning of ethical pitfalls. Regional evidence highlights the uneven readiness of educational leaders, pointing to a capacity gap that threatens equitable implementation. Within Kenya, the CBE reform aligns naturally with AI-supported learning systems, but infrastructural and governance challenges persist.

Empirical studies from Kenya, Uganda, and South Africa converge on a central insight: leadership preparedness and ethical governance are decisive in determining whether AI enhances or undermines educational transformation. The synthesis therefore reinforces the central argument of this study — that the effectiveness of AI in education is determined not by technological capability alone, but by the quality of leadership guiding its adoption, adaptation, and institutionalization.

2.6 Theoretical Framework

This study is grounded in five complementary theoretical perspectives that collectively suggest that the integration of Artificial Intelligence in education is not merely a technological shift but a leadership transformation process requiring adaptive, ethical, and collaborative governance structures.

2.6.1 Transformational Leadership Theory

Transformational Leadership Theory emphasizes the role of leaders in inspiring change, fostering innovation, and creating a shared vision (Bass & Riggio, 2006). In the context of AI integration in education, leaders are required to move beyond routine administrative functions to become change agents who guide institutions through technological and pedagogical transformation.

Within Kenya's CBE framework, this theory is particularly relevant as school leaders are expected to champion learner-centered approaches while simultaneously navigating digital transformation. Transformational leadership supports the development of a forward-looking vision that aligns AI adoption with educational goals and ethical considerations.

2.6.2 Adaptive Leadership Theory

Adaptive Leadership Theory focuses on the ability of leaders to respond effectively to complex, uncertain, and rapidly changing environments (Heifetz, 1994). The integration of AI in education presents adaptive challenges that cannot be addressed through traditional technical solutions alone.

In Kenya's evolving education landscape, leaders must continuously adjust to new technologies, policy shifts, and emerging demands of CBE. This theory underscores the importance of flexibility, learning, and responsiveness in managing AI-driven transformation in schools.

2.6.3 Diffusion of Innovation Theory

Diffusion of Innovation Theory explains how new ideas and technologies spread within a social system (Rogers, 2003). It highlights factors such as awareness, adoption rates, and institutional readiness that influence how innovations are embraced.

In the Kenyan context, AI adoption in education is still at an early stage, with significant variation across institutions. This theory helps explain the uneven uptake of AI tools and the role of leadership in promoting adoption, addressing resistance, and facilitating the integration of innovation within the CBE system.

2.6.4 Distributed Leadership Theory

Distributed Leadership Theory views leadership as a collective process shared among individuals within an organization rather than concentrated in a single leader (Spillane, 2006). In AI-enabled environments, decision-making is increasingly supported by data systems and collaborative processes.

This perspective is relevant in Kenya's education system, where leadership involves coordination among school administrators, teachers, policymakers, and emerging technological systems. AI further expands this distribution by introducing data-driven inputs into leadership processes.

2.6.5 Socio-Technical Systems Theory

Socio-Technical Systems Theory emphasizes the interdependence between social systems (people, structures, culture) and technical systems (tools, technologies, processes) (Trist, 1981). Effective organizational performance depends on the alignment of these two components.

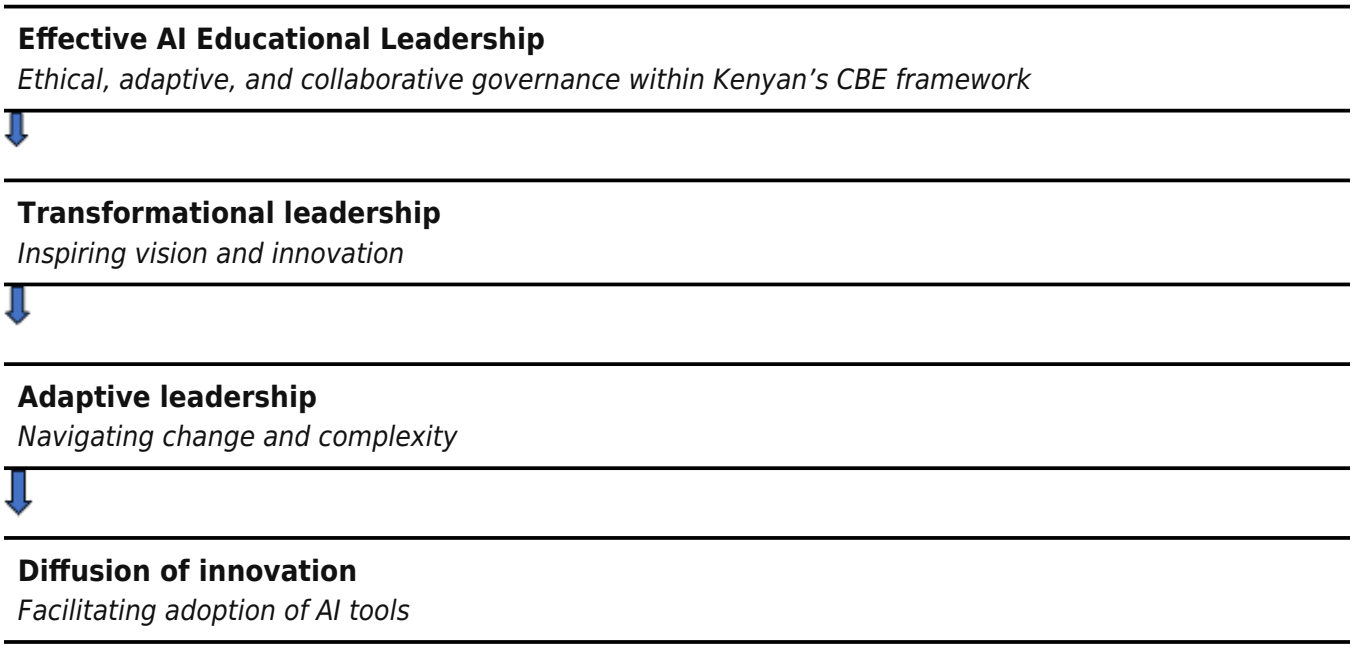
In the context of AI integration in Kenya's education system, this theory highlights the need to balance technological adoption with human capacity, institutional culture, and governance frameworks. It reinforces the idea that successful AI implementation is not purely technical but requires alignment with leadership practices, policy structures, and educational goals.

Collectively, these theories converge on a central argument: that the effectiveness of Artificial Intelligence in education is determined not by technological capability alone, but by the quality of leadership guiding its adoption, adaptation, and institutionalization.

This synthesis reinforces the central premise of this study—that redefining educational leadership in the era of AI requires a shift toward transformational, adaptive, distributed, and socio-technical leadership models that are responsive to both technological innovation and ethical imperatives within the Competence-Based Education framework.

Figure 1

Theoretical framework of AI Educational Leadership





Distributed leadership

Collaboration and decision making



Socio- Technical Systems

Aligning people and Technology

Figure 1 on the **theoretical Framework for Artificial Intelligence driven Educational Leadership** illustrates the interrelationship among five leadership theories—Transformational, Adaptive, Diffusion of Innovation, Distributed, and Socio-Technical Systems—that collectively underpin effective educational leadership in the era of Artificial Intelligence. Each layer contributes to ethical, adaptive, and collaborative governance within Kenya's Competency-Based Education framework.

Figure Note: The framework demonstrates how leadership effectiveness in AI integration emerges from the alignment of visionary, adaptive, innovative, collaborative, and socio-technical principles. The model emphasizes that technological success depends on leadership quality rather than technological capability alone.

3.0 METHODOLOGY

This study adopts a **qualitative conceptual research design,** drawing primarily on secondary data from scholarly publications, policy documents, and global frameworks on Artificial Intelligence (AI) in education. Such an approach is appropriate for examining emerging issues where empirical data remain limited but where theoretical and policy-oriented analysis can generate meaningful insights.

The analysis is informed by international sources, including UNESCO (2021) and OECD (2023), which provide perspectives on global trends in AI integration, leadership transformation, and governance frameworks. To strengthen regional relevance, the study incorporates recent empirical work from Sub-Saharan Africa. Wainaina and Sun (2025) examined Kenyan educators' perceptions of generative AI, highlighting both its instructional potential and ethical concerns. Arinaitwe and Asiimwe (2026) assessed Uganda's readiness for AI integration, emphasizing the role of institutional support and ICT infrastructure. Cross and Feldman (2025) explored South African schools, revealing rapid adoption of AI tools alongside unresolved governance and equity challenges. These studies enrich the analysis by situating Kenya's experience within a broader African context.

To contextualize the findings within Kenya, the study considers national education reforms, particularly the implementation of the Competency-Based Education (CBE) system, and examines how these reforms intersect with emerging technological developments. This dual focus — global frameworks and regional evidence — ensures that the analysis is both internationally informed and locally grounded.

A thematic analysis approach was employed to identify recurring issues related to leadership transformation, governance gaps, ethical considerations, and capacity development needs. The themes were interpreted through the lens of leadership theories that emphasize vision, adaptability, innovation, collaboration, and socio-technical alignment. These perspectives provided the conceptual scaffolding for the study, ensuring that the analysis remained theoretically grounded while responsive to the practical realities of AI integration in education.

The choice of a qualitative conceptual design reflects the emerging nature of AI in education, where empirical fieldwork is still limited but theoretical and policy debates are rapidly evolving. By synthesizing

global frameworks, regional empirical studies, and Kenya's ongoing reforms, the study is able to generate insights that are both contextually relevant and conceptually robust. This design allows for a critical examination of leadership and governance issues without being constrained by the absence of large-scale primary data, making it particularly suitable for informing policy and practice in a fast-changing educational landscape.

4.0 FINDINGS

This study examined how Artificial Intelligence (AI) is redefining educational leadership within Kenya's Competency-Based Education (CBE) system. The analysis drew on international frameworks (UNESCO, 2021; OECD, 2023; Holmes et al., 2019), which highlight global trends in AI integration, leadership transformation, and governance, as well as regional empirical studies from Sub-Saharan Africa (Wainaina & Sun, 2025; Arinaitwe & Asiimwe, 2026; Cross & Feldman, 2025). Together, these sources provided a dual perspective — situating Kenya's experience within both global debates and regional realities.

4.1 Redefining Educational Leadership Roles

AI is reshaping the traditional roles of educational leaders. Leadership is shifting from routine administrative functions to strategic, data-driven, and innovation-oriented practices. Leaders are increasingly required to interpret complex data, support AI integration in teaching and learning, and guide institutional change in digitally evolving environments. This transformation reflects principles of transformational and adaptive leadership, which emphasize vision, responsiveness, and continuous learning. Yet uptake remains uneven, particularly in contexts where digital literacy and infrastructure are limited (Wainaina & Sun, 2025).

4.2 Governance Gaps in AI Integration

The study identified significant governance gaps in AI adoption. Policy frameworks remain fragmented, resulting in uncoordinated implementation across institutions. Challenges include inadequate data protection, absence of ethical guidelines, weak accountability structures, and poor alignment between national policies and school-level practices. Regional evidence reinforces these concerns: Arinaitwe and Asiimwe (2026) found that inequities in ICT infrastructure undermine fairness in Uganda, while Cross and Feldman (2025) reported that South African schools face unresolved privacy and equity issues despite rapid AI uptake.

4.3 Opportunities for AI-Driven Educational Transformation

Despite these challenges, AI offers substantial opportunities to enhance leadership and learning outcomes. It enables data-driven decision-making, supports personalized learning, improves administrative efficiency, and promotes inclusivity by addressing diverse learner needs. These opportunities align closely with the CBE framework, which emphasizes **personalized learning pathways, competency mastery, and data-informed tracking of learner progress**. AI's ability to generate actionable insights from learner data makes it particularly relevant to CBE's continuous assessment model.

4.4 Capacity Development Needs for Educational Leaders

Limited leadership capacity emerged as a critical barrier to effective AI integration. Many leaders lack competencies in AI literacy, data interpretation, and digital leadership. Structured professional development programs are needed to build skills in digital transformation, ethical decision-making, and technology integration. Strengthening leadership capacity is therefore central to ensuring that AI is used

responsibly and effectively.

4.5 Link Between Leadership Readiness and AI Effectiveness

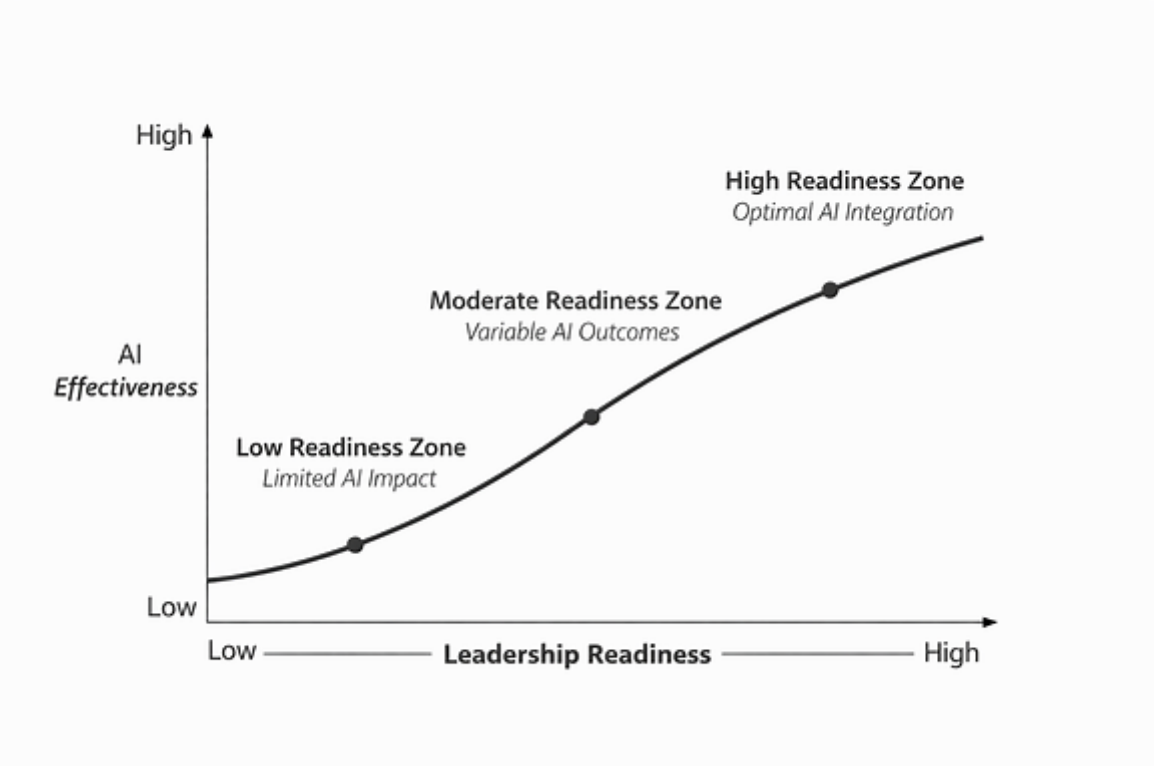
The findings establish a strong relationship between leadership preparedness and AI effectiveness. Institutions with well-prepared leaders are more likely to adopt AI strategically, implement governance safeguards, and achieve improved educational outcomes. Conversely, low readiness constrains AI's potential and increases risks of misuse. This relationship is illustrated in Graph 1, which shows that higher leadership readiness correlates with more effective and ethical AI utilization.

4.6 Synthesis of Key Findings

Overall, the findings demonstrate that while AI holds transformative potential for educational leadership in Kenya, its impact depends on the strength of leadership structures, the adequacy of governance frameworks, and the level of institutional capacity. Comparative evidence from Kenya, Uganda, and South Africa underscores that leadership preparedness and ethical governance are decisive in determining whether AI enhances or undermines educational transformation. A holistic approach — integrating technological innovation with leadership development, policy reform, and ethical safeguards — is essential for achieving sustainable and inclusive educational change within the CBE framework.

Graph 1

Relationship between Leadership Readiness and AI Effectiveness in Education



As shown, in Graph 1; **AI effectiveness increases progressively with higher levels of leadership readiness**. Institutions in the **Low Readiness Zone** experience limited AI impact because leaders often lack the capacity, governance structures, and confidence to guide implementation. In the **Moderate Readiness Zone**, outcomes vary—some progress occurs, but inconsistencies remain due to uneven

preparedness and fragmented oversight. Finally, the **High Readiness Zone**represents optimal AI integration, where strong leadership, ethical governance, and strategic vision enable sustainable and inclusive transformation.

5.0 DISCUSSION AND ANALYSIS

5.1 Redefining Educational Leadership in Kenya

The findings confirm that AI is gradually reshaping educational leadership in Kenya, particularly within the Competency-Based Education (CBE) framework. Leaders are increasingly required to interpret data from digital platforms, monitor learner progress, and guide teachers in integrating technology into instruction. This shift redefines leadership from administrative oversight to strategic, data-informed, and innovation-driven practice. International evidence (OECD, 2023; UNESCO, 2021) underscores similar global trends, where leadership is expected to move beyond routine management toward vision-building and innovation.

Regional studies reinforce this trajectory: Wainaina and Sun (2025) found that Kenyan educators recognize AI's instructional potential but remain cautious about ethical implications, while Arinaitwe and Asiimwe (2026) reported that Ugandan teachers' readiness is shaped by institutional support and infrastructure. These insights highlight that leadership transformation is not uniform but highly dependent on contextual realities such as infrastructure and digital literacy.

5.2 Governance Gaps and Institutional Readiness

Despite growing interest in digital transformation, governance structures in many schools remain underdeveloped. The absence of clear AI policy guidelines, limited frameworks for data protection, and weak accountability mechanisms risk undermining the potential benefits of AI. International frameworks (UNESCO, 2021) emphasize ethical safeguards and transparency, yet local implementation remains fragmented.

Comparative evidence shows similar challenges across the region: Uganda struggles with inequitable access to ICT (Arinaitwe & Asiimwe, 2026), while South Africa faces unresolved privacy and equity issues despite rapid AI uptake (Cross & Feldman, 2025). These findings suggest that Kenya's governance gaps are part of a broader regional pattern, underscoring the need for stronger alignment between national policy and school-level practice

5.3 Opportunities for AI-Driven Transformation

When effectively integrated, AI offers significant opportunities to enhance educational leadership. It supports data-driven decision-making, improves learner tracking, enhances efficiency in administrative processes, and promotes inclusive and personalized learning approaches. These opportunities align closely with CBE's emphasis on **personalized learning pathways, competency mastery, and data-informed tracking of learner progress**.

International evidence (Holmes et al., 2019) highlights AI's potential to personalize learning globally, while regional studies confirm its relevance in African contexts. For instance, Wainaina and Sun (2025) observed that Kenyan educators see AI as a tool for improving learner engagement, provided ethical safeguards are in place. This suggests that AI can complement CBE reforms if supported by intentional leadership and enabling policy environments.

5.4 Capacity Development Imperatives

A critical barrier to effective AI integration is the limited capacity of educational leaders. Many lack competencies in AI literacy, data interpretation, and digital leadership. International reports (OECD, 2023) emphasize the importance of leadership training in digital strategy, while regional evidence shows similar needs. Wainaina and Sun (2025) highlighted gaps in AI literacy among Kenyan educators, and Arinaitwe

and Asiimwe (2026) found that Ugandan teachers' readiness was uneven, reflecting disparities in training and institutional support.

These findings point to the urgent need for structured professional development programs focusing on ethical decision-making, digital leadership, and change management. Institutions responsible for leadership training must adapt their curricula to reflect emerging technological realities.

6.0 CONCLUSION

Artificial Intelligence is redefining educational leadership, governance, and institutional practices in profound ways. Globally, frameworks from UNESCO (2021) and OECD (2023) highlight AI's potential to personalize learning, improve efficiency, and strengthen data-driven decision-making, while cautioning against risks of inequity and ethical misuse. Regionally, studies from Kenya (Wainaina & Sun, 2025), Uganda (Arinaitwe & Asiimwe, 2026), and South Africa (Cross & Feldman, 2025) confirm that leadership readiness, institutional support, and governance safeguards are decisive in determining whether AI enhances or undermines educational transformation.

In the Kenyan context, the transition toward Competency-Based Education (CBE) presents a unique opportunity to align leadership practices with emerging technological realities. CBE's emphasis on **personalized learning pathways, competency mastery, and data-informed tracking of learner progress** resonates strongly with the capabilities of AI. Yet, without clear governance frameworks, adequate capacity development, and strong ethical safeguards, the potential benefits of AI may remain unevenly realized.

This study has demonstrated that effective educational leadership in the era of AI requires a shift toward data-informed, ethically grounded, and innovation-driven practices. It further underscores the importance of coordinated policy interventions and leadership development programs to support this transition. The evidence shows that technology alone cannot transform education; rather, it is the leadership structures, governance systems, and institutional cultures that determine how AI is adopted and applied.

Ultimately, Kenya's ability to harness AI for educational transformation will depend on its investment in leadership capacity, the establishment of coherent policy frameworks, and the promotion of ethical and inclusive practices. By situating AI adoption within both global debates and regional realities, Kenya can position itself not only as a reformer of its own education system but also as a contributor to broader conversations on equitable and sustainable digital transformation in education.

7.0 RECOMMENDATIONS FOR POLICY AND PRACTISE

The findings of this study highlight the urgent need for structured interventions to guide the integration of Artificial Intelligence (AI) in educational leadership and governance within Kenya. Drawing on global frameworks (UNESCO, 2021; OECD, 2023) and regional empirical evidence from Kenya, Uganda, and South Africa, the following recommendations are proposed to ensure that AI adoption strengthens, rather than undermines, the Competency-Based Education (CBE) reform.

7.1 Development of a National AI Governance Framework for Education

The Ministry of Education, working with stakeholders such as ICT regulators, teacher unions, and civil society, should establish a comprehensive governance framework for AI in education. This framework must address data protection, accountability, transparency, and equitable access, ensuring that AI adoption aligns with national education goals and ethical standards. Regional evidence shows that fragmented governance, as seen in Uganda and South Africa, risks widening inequalities; Kenya must avoid similar pitfalls.

7.2 Integration of AI Competencies in Leadership Development Programs

Institutions responsible for training educational leaders, including the Kenya Education Management Institute (KEMI), should embed AI literacy, data-driven decision-making, and digital ethics into their curricula. Equipping leaders with these competencies will enable them to interpret learner data, guide teachers in technology integration, and make informed strategic decisions. This aligns with CBE's emphasis on **personalized learning pathways, competency mastery, and data-informed tracking of learner progress.**

7.3 Establishment of Ethical Guidelines for AI Use in Schools

Clear ethical standards are needed to safeguard against algorithmic bias, misuse of learner data, and over-reliance on automated systems. These guidelines should be developed collaboratively, drawing on international best practice while reflecting Kenya's local realities. Ethical safeguards will ensure that AI supports inclusive education rather than reinforcing existing disparities.

7.4 Investment in Digital Infrastructure and Equity

The government should prioritize investment in digital infrastructure, particularly in underserved regions, to ensure equitable access to AI-enabled tools. Regional studies highlight that inequities in ICT access undermine fairness and effectiveness. Addressing disparities in connectivity, hardware, and technical support is essential to prevent the digital divide from widening under CBE reforms.

7.5 Strengthening Monitoring and Evaluation Mechanisms

Robust systems must be established to monitor the implementation and impact of AI in education. Continuous evaluation will enable policymakers and leaders to identify challenges, measure outcomes, and make evidence-based adjustments. This will also provide accountability and transparency, ensuring that AI adoption remains aligned with national education priorities and ethical standards.

To translate these recommendations into actionable steps, Table 1 summarizes the proposed policy interventions, organized by immediate and medium-term actions, along with their expected outcomes.

Table 1

Policy Recommendations, Time Frames, and Expected Outcomes

Time Frame	Policy Recommendations	Expected Outcome
Immediate Actions	Develop a national AI governance framework for education.	Clear ethical and legal standards for AI use; improved accountability and transparency.
	Establish ethical guidelines for AI use in schools.	Safeguards against bias, misuse of learner data, and over-reliance on automation
	Strengthen multi-stakeholder partnerships	Facilitate resource sharing, and effective implementation of AI tools

Medium-Term Actions	Invest in digital infrastructure.	Reduced digital divide; equitable access to AI-enabled tools for learners and schools.
	Embed AI literacy and digital leadership modules into teacher and leadership training curricula	Sustainable leadership capacity; institutional readiness for long-term AI integration.
	Promote research and innovation to generate local evidence for AI use in education	Supports evidence-based policy development

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