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Proposed Policy Framework for Artificial Intelligence Integration in Zimbabwe's Higher and Tertiary Education Sector

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Abstract

The higher and tertiary education sector in Zimbabwe is experiencing a rapid AI adoption wave in the total absence of a context-specific governance framework. Currently, existing policy frameworks such as the Zimbabwe Council for Higher Education Act (Chap. 25.27) is silent on AI development and deployment, creating a regulatory void that exposes institutions, learners and educators to compounding governance risks. In direct response to this lacuna, this study proposes the development of a context-specific AI policy framework in Zimbabwe's higher and tertiary education sector. Guided by DiMaggio and Powel's 1983 institutional theory, the study evaluated literature focusing on current AI awareness, AI adoption and utilisation, perceived benefits and threats inherent to AI integration as well as analysing the institutional capacities for effective AI deployment within Zimbabwe's higher Education institutions. Using a qualitative approach based on a multiple case study design across the 20 higher and tertiary education institutions, data were collected from 126 participants being Pro Vice Chancellors, registrars, principals, deputy registrars, faculty deans, department chairpersons/ head of departments, lecturers, and students purposively selected from Zimbabwe's higher education institutions. The study employed the six-procedure thematic analysis by Braun and Clarke to analyse data and five thematic clusters namely AI governance, regulatory and policy landscape; ethical responsibility, integrity and data privacy; infrastructure, access and equity; human capital and institutional capacity and pedagogical innovation, curriculum reform and research emerged. From the preceding five thematic clusters, an eight - dimensional AI policy framework was designed and is aligned with Zimbabwe's National AI Strategy, Higher Education 5.0 philosophy, the Cyber and Data Protection Act (Chap. 12:07), the National ICT Policy (2022–2027), the African Union AI Continental Strategy, and the United Nations Educational, Scientific and Cultural Organization (UNESCO) Recommendation on AI in Education (2021). This study is significant given its potential to act as a white paper towards AI development and deployment in Zimbabwe's higher and tertiary education sector. Overall, development of the AI governance framework in Zimbabwe's higher and tertiary education sector is essential and a timely achievable initiative as the window for policy inaction has closed.

1. Introduction and rationale for the study

Throughout human history, the emergence of Artificial Intelligence (AI) constitutes one of the seismic technological shifts with far-reaching impacts as it recreated how knowledge is generated, diffused, and applied across all segments of society. At a global level, particularly in the higher and tertiary education sector, AI innovations have so far reshaped educational functions such as teaching approaches, research, administrative processes, and experiential learning among others. As indicated in literature, a wide array of AI technologies such as the Generative AI models, adaptive learning platforms, intelligent tutoring systems, writing and grammar assistants, assistive technologies, virtual experiences, AI-powered chatbots and virtual assistants, predictive analytics, automated grading and assessment tools, automated document processing, AI-powered research tools and data analysis tools have fundamentally altered the global academic setting (Gimpel et al., 2025; Boustani, Sidani & Boustany, 2024).

While the AI revolution has heightened in the past decade, it is noteworthy to acknowledge that its integration in the higher Education sector has not been even across nations given the widening gap between the developed and developing countries in terms of infrastructure deficits, policy shortcomings, capacity constraints as well as governance and implementation challenges. Likewise, the higher education sector in Zimbabwe finds itself at a strategic crossroads as it confronts growing pressure to improve the quality of education, revamp infrastructure, elevate research output and churn out competitive graduates equipped with digital skills relevant to the global digital labour market. At this juncture, it is also fair to acknowledge that the digital orientation by Zimbabwe's higher education sector occurs at the opportune time as it resonates with the country's National Development Strategy 1 2021–2025 that prioritises education anchored on Science, Technology and innovation as the springboard for economic development. Furthermore, digital orientation for the higher education sector in Zimbabwe stands strategic as it fulfils the Education 5.0 curriculum which broadens the traditional university mandate to include innovation and industrialisation thus positions AI integration as a core requirement for national development.

The higher and tertiary education sector in Zimbabwe under the armpit of the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development (MHTEISTD) is quite diverse comprising public and private universities, teachers' colleges, polytechnic colleges, technical colleges and some vocational Training Centres (VTCs), excluding those under the Ministry of Youth Empowerment, Development and Vocational Training. Still within the higher and tertiary education sector, is the Zimbabwe Council for Higher Education (ZIMCHE) that exists primarily to promote quality through accreditation. With a literacy rate above 92% (ZimStat, 2025), and a national drive towards an information society, Zimbabwe's higher education sector is fast expanding the population of digital natives, creating an urgent need towards digital environment regulation. AI integration in higher and tertiary education presents both opportunities and threats for all stakeholders such as students, staff, management, external partners, and broader society. As with historical patterns of technological integration, AI comes with both opportunities and dangers. From the opportunities side, AI integration includes enhanced efficient academic and administrative processes, and 771340956 technology use for good purposes (Zheng et al., 2021; Kasceci et al., 2023) while the perilous side raises concerns regarding academic integrity, students' creativity, independence and critical thinking, unequal access to technology, technology use for malicious purposes, and limited infrastructure (Larsen et a;., 2024; Himendra & Sachini, 2023; Yan et al., 2023; Ponctual Falcao et al., 2020). Despite the significant efforts and investments towards AI integration, there exists a notable absence of context-specific AI policy framework guiding AI deployment and governance in Zimbabwe's higher education sector.

The need for AI policy frameworks in higher education cannot be over-emphasised as its absence often opens avenues to multiple challenges. When AI deployment exists in an unregulated environment, diverse challenges such as poor data governance, fragmented and uncoordinated use, a lack of responsible and ethical use, and pedagogical dissonance cannot be discounted. In addition, literature provides that absence of AI policy frameworks breeds uncertainty particularly for stakeholders like potential funders, suppliers and global partners in AI initiatives, while learners are often vulnerable to

abuse (Temper, Tjoa & David, 2025). Given that AI has already been acknowledged as having a potentially disruptive force in nearly all segments of society (Rigley et al. 2024), with the same effect in higher education (Moorhouse et al., 2023), there is an urgent need for AI regulatory frameworks in Zimbabwe's higher education. The rationale for this study also emerges from the weaknesses of the current Education Act which is silent on AI deployment and governance. Using evidence from the lead economies, AI integration across sectors has always been associated with a multiplicity of challenges chief among them inequitable access, poor data quality, technology abuse and irresponsible use, and lack of integrity among others (Rigley et al., 2024).

Globally, several nations that include Australia, Canada, China, Japan, Singapore, and the United Kingdom among others, have so far made significant progress by developing legal frameworks or guidelines that address or influence AI usage within the higher education or the education sector as a whole. In the US, the approach is rather market driven or self-regulatory as individual universities develop specific generative AI use in their courses. In Africa, countries like Morocco, Rwanda, Togo, Kenya, and Nigeria among others have developed national AI strategies that influence institutional policies in AI deployment and governance (Munga & Quansah, 2025; Unifrenko, 2024. 2024). Regional regulatory frameworks have also emerged to regulate AI deployment as exemplified by the European Union (EU) AI Act and the African Union (AU) AI Continental Strategy. These instruments provide legal frameworks for AI utilisation while addressing the inherent opportunities and threats across multiple sectors including education. The AU AI Strategy specifically emphasises the need for developing context-specific solutions to continental challenges (Unifrenko, 2024). Likewise, Zimbabwe's higher education sector requires a policy framework that reflects the country's unique socio-economic and political landscape ensuring consistency with local imperatives rather than reliance on imported models. Zimbabwe's higher and tertiary education sector stands at a strategic crossroads. With a literacy rate exceeding 92%, high population rate of digital natives, and a national drive towards an information society, the sector faces mounting pressure to improve educational quality, revamp infrastructure, and produce graduates equipped with globally competitive digital competencies. The development of this AI Policy Framework is urgently necessitated by the current absence of a context-specific regulatory instrument governing AI deployment and governance in Zimbabwe's higher education sector. The current Zimbabwe Council for Higher Education Act (Chap. 25:27) is silent on AI deployment and governance, creating a regulatory lacuna that exposes institutions and stakeholders to risks arising from unregulated AI adoption.

Correspondingly, the presence of Zimbabwe's Cyber and Data Protection Act 5 of 2021 should be seen as an opportunity as it creates a foundation upon which an AI policy framework will be anchored. From the foregoing, the present study will be guided by four key objectives namely to: (1) explore the current AI awareness, adoption and utilisation in Zimbabwe's higher educator sector, (2) identify the perceived benefits and threats associated with AI integration among the higher education institutions in Zimbabwe, (3) to analyse the institutional capacities for effective AI deployment within Zimbabwe's higher Education institutions, and (4) develop a context specific policy recommendation towards an AI Policy Framework for Zimbabwe's Higher Education Sector. This study is significant as it constitutes a White

paper proposing necessary interventions towards the development of an ethical, equitable and sustainable AI Policy Framework that aligns with the country's national development trajectory.

2. Review of Related Literature

2.1 Theoretical framework: The institutional theory

To provide a solid theoretical underpinning as well as a clearer understanding of AI policy development within the context of higher education in Zimbabwe, our study applied the Institutional Theory proposed by DiMaggio and Powel (1983). The theory, offers a powerful lens through which stakeholders can examine the behaviour of organisations in the context of transformative technologies. At the core of the Institutional Theory, is the fundamental argument that the behaviour of an organisation is not only a result of rational decisions aimed at maximising efficiency, but is also influenced by the need to align itself with the societal expectations and norms to gain legitimacy (DiMaggio and Powel (1983). The theory was applied by Humble (2025) to generate a comprehensive understanding of the AI polices of Swedish universities. In this current study, we argue that, given that Zimbabwe has recently developed a National AI Strategy, higher education institutions in Zimbabwe, which are predominantly public institutions, are under pressure to conform to government expectations.This makes the development of an industry-specific AI policy pivotal in guiding higher education institutions' decisions to ensure responsible AI usage. The Institutional Theory, particularly the concept of Institutional isomorphism, propounded by DiMaggio and Powell (1983), provides three types of pressures (coercive, normative, and mimetic) that push organisations towards change and cohesion such that institutions that operate in the same field become more similar in the long run. Coercive pressure emanates from political influence and comes from rules and regulations; in our study context, such pressure may come from the national and international legal instruments. For instance, Zimbabwe's Cyber and Data Protection Act [Chapter 12:07] and Statutory Instrument 155 of 2024 which provide strict data processing and licensing regulations. Further, pressure comes from potential updates to the Copyright and Neighbouring Rights Act [Chapter 26:05] as it seeks to address ownership and protection of AI-generated works while the Labour Act [Chapter 28:01] focuses on modifying the legislation to adapt to the impacts of AI and automation on the workforce. Fundamentally, instruments such as the National Information and Communications Technology (ICT) Policy (2022–2027) and Smart Zimbabwe 2030 alongside the National AI Strategy define the overarching regulatory framework, infrastructure and ethical provisions for AI deployment and development. Moreover, at an international or regional level, resolutions from the African Commission for Human and People's Rights (ACHPR) on AI, robotics and human rights are influencing national and industry approaches to data governance and AI deployment and development. Higher education institutions in the country must navigate these to avoid lawsuits. This is, however, not an easy task given the dynamic nature of AI technologies, which, according to Ziboff (2019) can at times outpace the existing legal frameworks. Normative pressure, on the other hand, comes from professionalisation and standardisation. And in this study context, such pressure may come from professional standards and also industry-specific guidelines for AI usage. Such pressure would force universities to capacitate

themselves to ensure responsible AI usage (Floridi et al.,2018). Lastly, mimetic pressure, according to Martinez-Ferrero and Garcia-Sanchez (2017), emanates from corporations copying the behaviour of others in times of uncertainty. In our study context, such pressure could come as universities imitate the AI strategies of other universities, especially in teaching and learning, and also in the marketing of university programmes.

2.2 What is AI?

Artificial Intelligence (AI) is a broad computational intelligence discipline encompassing multiple domains including Machine Learning (ML), Natural Language Processing (NLP), Computer Vision, Robotics, Expert Systems, Data Science, and Generative AI, which are hierarchically organised with AI at the generic level, followed by ML, Deep Learning (DL), and Generative AI at progressively more specialised levels (Guettala et al., 2024). Of particular relevance to higher education is Generative AI, a strand of deep learning comprising models and algorithms specifically designed to generate new content including text, images, and video by capturing and replicating underlying patterns and distributions from training data in response to statistical models and prompts (Guettala et al., 2024; Cao et al., 2023; Brynjolfsson et al., 2023; Peis et al., 2023; Sengar et al., 2024). At a global level, the accelerated integration of Generative AI into higher education was catalysed by the Covid-19 pandemic (2020–2021), which intensified demand for remote and digital learning technologies, and further propelled by the widespread introduction of generative AI applications from November 2022 onwards (Zeadally et al., 2020).

2.3 AI in the Higher Education Sector: Opportunities and Challenges

Within higher education, Generative AI has demonstrated significant potential in enhancing admission processes, teaching and learning, research, assessments, content generation, and student support services, enabling more personalised and adaptive learning experiences tailored to individual student needs while allowing educators to customise teaching resources and assessments to improve educational outcomes (Luckin & Holmes, 2016; Sengar et al., 2025). Many authors, among them Zheng et al. (2021), Damper et al. (2023), Grassini (2023) Dempere et al. (2023), and Funa and Gabay, (2025) concur that the recent integration of AI into the teaching and learning environments has ushered in enormous opportunities in the education sector. Generative AI, for instance, has been found to possess diverse capabilities that can transform teaching, assessment, and learning in the higher education sector (Kasneci et al 2023). Major opportunities that have been associated with the integration of AI in the higher and tertiary education sector include learning content development, personalised learning opportunities, optimising educational outcomes, and increased student engagement (Wu et al 2024; Funa and Gabay,2025). Apart from the above human resources perspective, the productivity of university employees is also going to be enhanced. This view is supported by Kitamura (2023) and also Bond et al. (2024) who expressed the view that with AI support, knowledge workers become more productive. Moreover, the help of generative AI promotes inclusive education by enabling people with special education needs to be integrated into the education setting (Khazanchi & Khazanchi, 2024).

Despite AI providing these endless opportunities, concerns regarding its potential impact on academic integrity (Himendra & Sachini, 2025), students' creativity, independence, and critical thinking have also been raised (Yan et al., 2023). The argument on academic integrity stems from scenarios where students can claim ownership of AI-generated content without even paraphrasing or citing it. Apart from the above, Yan et al. (2023) raised the danger of students' overreliance on AI, which can diminish their level of critical thinking and promote laziness. From a developing country perspective, another primary concern is the profound digital divide, where inequitable access to reliable hardware, stable high-bandwidth internet, and inconsistent electrical power exacerbates existing inequalities between urban and rural institutions (Moyo, 2022). This disparity risks creating a two-tiered education system, which contravenes principles of equitable education. Furthermore, the process is hampered by a significant academic capacity gap whereby many educators lack the preparedness to pedagogically utilise AI tools due to a shortage of comprehensive and ongoing professional development (Ndlovu & Sibanda, 2023). This is compounded by curricular rigidity in the form of slow-adapting curriculum frameworks, which create a disconnect from rapid technological innovation (Chitanana, 2022). Addressing these multifaceted challenges, which range from infrastructure deficits, capacity building, to ethical governance and cultural change is therefore central to formulating a viable AI policy framework for the sector.

3. Materials and Methods

The study is based on the qualitative method mainly using personal interviews and document analysis focusing on AI integration and associated policies and guidelines for higher education in Zimbabwe. The data collection exercise started in August 2025 and ended in February 2026. Using a multiple case study design, the data collection exercise was divided into five clusters namely Cluster A (Higher Education institutions in Harare and Bindura); Cluster B (Higher Education institutions in Mutare); Cluster C (Higher education Institutions in Bulawayo, Matabeleland South and Matabeleland North); Cluster D (Higher Education Institutions in Masvingo) and Cluster E (Higher Education Institutions in Gweru). Selection of the study contexts out of the country’s ten provinces was based on the concentration of Higher Education Institutions. Guided by the data saturation point, a total of 126 interviews were conducted with purposively selected students, department chairpersons, faculty deans, deputy registrars - academic affairs, and registrars from 20 public and private universities, teachers’ Colleges, and polytechnic colleges. The research team stopped conducting interviews after reaching a point when asking questions no longer yielded new insights, themes, or perspectives necessary to the research purpose. Reaching data saturation point ensured the research team adequately explored the study’s phenomenon and ceased data collection with minimum risk of overlooking critical insights (Ahmed, 2025). The interview protocol was the key instrument for data collection and its structure was designed following the guidelines by Montoya (2016). The interview protocol consists of five sections namely participants demographics, current AI awareness, adoption and utilisation in Zimbabwe’s higher educator sector, perceived benefits and threats associated with AI integration among the higher education institutions in Zimbabwe, the institutional capacities for effective AI deployment within Zimbabwe’s higher Education

institutions, and proposed development of a context specific AI Policy Framework for Zimbabwe's Higher Education Sector.

3.1 Ethical Considerations

This study was conducted following the international ethical standards as contained in the 1964 Declaration of Helsinki and its later amendments. Approval was granted by Midlands State University Ethics Review Board (See Appendix B - Ethical Clearance FBS/002/2025), while gatekeeper consent (Appendix C) was obtained from the Ministry of Higher and Tertiary Education, Innovation, Science and Technology Development (MHTEISTD) on 25 June 2025. Informed consent was also obtained from all study participants.

4. Data analysis

The study employed the thematic analysis method articulated by Braun and Clarke (2006) that includes familiarisation with data, generating initial codes, searching for theses, reviewing themes, defining and naming themes and lastly producing the report. This procedure allowed for reducing, organising and interpreting textual data to uncover themes, patterns and insights from the interviews.

4.1 Demographic Characteristics of Participants

Table 1 (Appendix A) presents Demographic Characteristics of Study Participants

[Table 1 near here]

Source: Research Data

Participants were drawn from a diverse range of higher education institutions in Zimbabwe including public and private universities, polytechnics as well as public, and private Teachers' Colleges thereby substantially strengthening trustworthiness of the perceptions and opinions gathered. The occupational diversity of participants spanning Pro Vice Chancellors, registrars, principals, faculty deans, head of departments, ICT directors, lecturers, and students bolstered the credibility of data gathered across all four research objectives. More importantly, participation by senior management of higher education institutions such as the Pro Vice Chancellors, registrars, principals and faculty deans brings strategic and governance perspectives relevant to AI Policy framework development while ICT directors proffer technically grounded insights into institutional capacities for AI deployment. Further, participation by the Deans and Head of departments / chairpersons provided faculty-level awareness and challenges inherent to AI adoption and utilisation. At the instructional level, lecturers provided experiential accounts of AI integration while students offered end-user perspectives regarding the benefits and threats of AI in their pedagogical environments. Predominance of participation by masters and doctoral qualifications holders in this study was significant as this enhanced the analytical depth and informed nature of responses given the academic grounding that individuals possess. Finally, age range spanning from 25

to 70 years captured the generational variation in AI awareness and attitudes which is vital for a comprehensive and context-specific AI policy framework. To crown it all, it is evident that the diverse participant pool promotes multiple perspectives, institutionally representative and experientially rich data important towards producing credible and generalisable policy recommendations for AI integration in Zimbabwe's higher and tertiary education sector.

5. Overview of findings

The proposed framework is an evidence-based policy instrument developed from rigorous qualitative research conducted across 20 higher education institutions nationally, involving 126 purposively selected participants including Pro Vice Chancellors, Registrars, Faculty Deans, Department Chairpersons, ICT Directors, Directors of AI Centres, Lecturers, and Students from public universities, private universities, polytechnic colleges, and teacher training colleges. The framework is informed by Braun and Clarke's (2006) six-phase thematic analysis procedure, through which five overarching thematic clusters were derived from the interview excerpts. These clusters directly inform the eight policy pillars that constitute the core architecture of this framework. The framework is further anchored in Institutional Theory particularly the concepts of coercive, normative, and mimetic isomorphism (DiMaggio & Powell, 1983) recognising that Zimbabwe's higher education institutions operate within multi-layered regulatory, professional, and peer-influence environments.

5.1 Policy Framework Summary

- 8 Policy Pillars covering the comprehensive AI integration lifecycle
- 5 Thematic Clusters generated from Braun and Clarke (2006) thematic analysis
- 126 participants across 20 selected higher education institutions
- Aligned with national, regional, and global AI governance instruments
- Execution timeline (2026–2030) with two-year Review Cycles

5.2 Legal and Policy Anchors

This framework is rooted in and consistent with the following national, regional, and global instruments shown in Table 2.

Table 2
Key instruments informing AI Governance Framework for Higher Education in Zimbabwe

Policy Instrument	Relevance to Framework
Zimbabwe Cyber & Data protection Act (Ch. 12.07)/ SI 155 of 2004	Data Governance, Data processing, Digital technologies Usage Rights
Zimbabwe Council for Higher Education Act (Ch. 25.27)	Quality Assurance, Accreditation, in HE – requires updating for AI
National ICT Policy (2022–2027) & Smart Zimbabwe 2030	Digital infrastructure, AI ecosystem development
National AI Strategy (2026–2030) & Education 5.0 Philosophy	Universal National AI governance and ethical provisions, while aligning the AI Policy to the new Higher Education Philosophy based on Teaching, Research, Community Engagement, Innovation and Industrialisation Innovation
Copyright & Neighbouring Rights Act (Ch. 26.05)	AI-generated content authorship and Intellectual Property Rights
Labour Act (Ch. 28.01)	Impact of AI on workforce and employment in education
African Union AI Continental Strategy (2024)	Continental ethical AI governance and context-driven solutions
European Union (EU) AI Act (2024)	International Benchmark for risk-based AI regulations
UNESCO Recommendation AI Education (2021)	Global ethical standards for AI in Education settings
Source: Research Data	

The emergence of Artificial Intelligence (AI) constitutes one of the most profound technological shifts in human history, fundamentally reshaping how knowledge is generated, diffused, and applied across all segments of society. In the higher and tertiary education sector globally, AI technologies encompassing generative AI models, adaptive learning platforms, intelligent tutoring systems, AI-powered chatbots, predictive analytics, and automated assessment tools have fundamentally transformed academic functions including teaching, research, administration, and experiential learning. Zimbabwe's higher and tertiary education sector comprising public and private universities, teachers' colleges, polytechnic colleges, technical colleges, and vocational training institutions across the country's ten provinces stands at a strategic crossroads. Against a background of a high literacy rate, a digital native generation, and the national drive towards a knowledge society, the sector faces mounting pressure to improve educational quality, revamp infrastructure, and produce graduates equipped with globally competitive digital competencies.

5.3 Section 1 Thematic Analysis Procedure (Braun & Clarke, 2006).

The policy pillars founding this framework were derived through a rigorous application of Braun and Clarke's (2006) six-step thematic analysis procedure. Using personal interviews, data were collected from 60 participants across 20 higher education institutions in five national research clusters (Harare/Bindura, Mutare, Bulawayo/Matabeleland, Masvingo, and Gweru) between August 2025 and February 2026. The thematic analysis process is detailed in Table 3.

Table 3
Thematic Analysis Procedure by Braun and Clarke (2006).

Phase 1	**Familiarisation with the Data** **The research team independently read and re-read the full corpus of 60 interview transcripts. This process involved immersive engagement with the data to develop familiarity with its depth, breadth, and complexity. Initial impressions, recurring concerns, and notable quotes were noted in research journals. Data pertaining to AI policy awareness, infrastructure challenges, ethical dilemmas, capacity gaps, and governance aspirations were flagged at this stage**
Phase 2	**Generating Initial Codes** **The research team systematically generated initial codes from the data. Over 340 discrete codes were identified across the dataset. Codes were applied to meaningful segments of text relating to: AI tool usage patterns, institutional policy gaps, infrastructure deficits, academic integrity concerns, capacity and training needs, data privacy issues, curriculum adaptation demands, and stakeholder governance expectations. The coding process was both deductive and inductive.**
Phase 3	**Searching for Themes** **Initial codes were sorted and collated into potential themes by examining their relationships and convergences. Code maps were developed on shared whiteboards during team workshops in Gweru and Harare. Thematic clusters began to emerge around: (i) governance and regulation, (ii) ethical and responsible AI use, (iii) infrastructure and access equity, (iv) human capital and institutional capacity, and (v) pedagogical innovation and curriculum reform. Sub-codes were then classified under parent themes, and a preliminary thematic map was produced.**
Phase 4	**Reviewing Themes** Themes were reviewed against the coded data extracts and the full dataset. This two-level review ensured internal coherence within themes and clear differentiation between themes. Three initial candidate themes were refined: 'Research and Innovation Governance' was separated from the broader 'AI Governance' theme; 'Data Privacy and Security' was elevated from a sub-theme to a standalone theme given the volume and weight of participant commentary; and 'Monitoring and Evaluation' was added following review of institutional-level concerns about accountability frameworks.
Phase 5	**Defining and naming Themes** The refined thematic structure was finalised into five overarching thematic clusters, each underpinned by clear definition reflecting participant voices and the research literature. These five themes directly map and generate the eight policy pillars of this framework. Each theme was named using participant-resonant language and grounded in both the Zimbabwean HE context and international best practice.
Phase 6	**Producing the Report**
	The final phase involved translating the thematic findings into a structured, actionable policy framework. Each thematic cluster informed one or more policy pillars, complete with guiding principles, strategic objectives, implementation actions, responsible stakeholders, and indicators of success. The framework development was drafted by 2 researchers with input from the full research team. Drafts were reviewed against the interview data to

Source: Research Data

ensure fidelity to participant voices and the realities of Zimbabwe's higher education sector.

Source: Research Data

5.4 Section 2 Thematic Cluster (TC) to Policy Framework Pillar Mapping

Thematic Clusters and their relationship to the Policy Framework Pillar mapping are depicted in Table 4.

Table 4
Relationship between the Thematic Cluster to the Policy Framework Pillar Mapping

Braun and Clarke (2006) Thematic Cluster	**Corresponding Policy Pillar(s)**
First Thematic Cluster: AI Governance, Regulation and Policy Landscape	1st Pillar: Governance, Regulation & Compliance
Second Thematic Cluster: Ethical Responsibility, Integrity and Data Confidentiality	2nd Pillar: Ethical AI Use & Academic Integrity 3rd Pillar: Data Confidentiality, security and Intellectual Property
Third Thematic Cluster: Infrastructure, Access and Inclusivity	4th Pillar: Digital Infrastructure, Connectivity & Equitable Access
Fourth Thematic Cluster: Human Capital, Institutional Capacity and Professional Development	5th Pillar: Capacity Building, Training & Professional Development
Fifth Thematic Cluster: Pedagogical Innovation, Curriculum Reform and Research	6th Pillar: Curriculum Integration & Pedagogical Innovation 7th Pillar: AI-Enabled Research, Innovation & Knowledge Generation 8th Pillar: Monitoring, Evaluation & Continuous Improvement

Source: Research Data

5.5 Section 3: Policy Framework Strategic Direction, Mission Statement and Foundational Tenets

In the governance architecture of the Higher Education Sector, the Vision, Mission Statement, and Foundational tenets act as normative and strategic pillars that collectively reorient institutional thinking and provide the ideological scaffolding upon which a comprehensive Artificial Intelligence Policy Framework is constructed.

Vision

To be a transformed, inclusive, and globally competitive Zimbabwean higher and tertiary education sector that harnesses the power of Artificial Intelligence ethically, equitably, and sustainably to advance

knowledge generation, quality teaching and learning, and innovation towards national development.

Mission

To provide a holistic, empirical, and context-specific regulatory framework that ensures AI deployment is transparent, responsible, equitable, continuously evaluated, and adapt foundational global ethics into local realities across Zimbabwe's higher and tertiary education sector.

Foundational Tenets / Core Values

This framework is governed by ten principles, derived from participant data and international AI ethics standards featured in Table 5.

Table 5
Foundational Tenets in the HE AI Policy Framework Architecture

Principle	Description
1st Principle: Human Supremacy (HS)	AI systems in Higher Education to prioritise human dignity, agency, and wellbeing. Technology serves people, not the reverse.
2nd Principle: Diversity Equity and Inclusion (DEI)	To ensure democratisation of AI education, institutions must eliminate barriers based on gender, location and socioeconomic standing or physical limitations with active reduction of digital inequality remaining a critical priority.
3rd Principle: Transparency	AI technologies for academic and administrative processes must be understandable, with clear disclosure to all affected stakeholders.
4th principle: Accountability	Higher Education Institutions should establish clear lines of responsibility for AI decisions, outcomes, and threats. Steering committees must be explicitly mandated across the higher education sector to promote accountability.
5th Principle: Academic Integrity	Highest standards of academic honesty should be upheld throughout the AI integration cycle. Policies should clearly articulate acceptable and unacceptable uses of AI in teaching, assessment, research, and scholarship.
6th Principle: Data Sovereignty and Confidentiality	AI generated Personal and Organisational Data must be secured in compliance with Zimbabwe's Cyber and Data Protection Act and Internal Privacy Guidelines available in the Institution.
7th Principle: Situational Relevance / Context-Specificity	Zimbabwe's higher Education Sector in its AI development must prioritise context-driven and developmentally relevant technologies to address local realities while curtailing digital colonialism.
8th principle: Sustainability	AI funding must prioritise long term economic viability and environmental stewardship establishing resilient operational blueprints from day one.
9th Principle: Continuous Learning	The Zimbabwe higher education sector AI framework must be dynamic, adapting to the swift exponential growth of AI technologies through ongoing evaluation, expert engagement and evidence-based modification.
10th Principle: Participatory Governance	AI policy development and implementation must be founded on consensus decision making incorporating all stakeholders, students, staff, management, government, industry, and civil society in a participatory manner.

Source: Research Data

5.6 Section 4: The Higher education AI Policy Framework Pillars

A total of eight policy pillars constitute the structural core of the Zimbabwe AI Policy Framework for Higher and Tertiary Education. Each pillar is derived from the thematic clusters identified through Braun

and Clarke's (2006) thematic analysis depicted in Table 3 and is supported by strategic objectives, implementation actions, responsible parties, and measurable indicators.

5.6.1 First Pillar: Governance, Regulation and Compliance (GRC)

Thematic Cluster: TC1- AI Governance, Regulation and Policy landscape

Rationale

Interview participants consistently highlighted the absence of a coherent institutional and national regulatory framework for AI in higher education. Pro Vice Chancellors, Registrars, and ICT Directors across clusters noted that AI is already being used in diverse ways from administrative functions to grading tools in the absence of institutional policy. This pillar responds to the coercive isomorphic pressure identified in Institutional Theory, establishing the regulatory architecture within which all other pillars operate.

Strategic Priorities

- Design a dedicated National AI in Higher Education Advisory Board (NAHEAB) under MHTEISTD to provide policy direction, coordination, and oversight.
- Mandate all higher and tertiary education institutions to develop institution-specific AI governance policies aligned with this framework within 18 months of adoption.
- Create an AI Governance Committee (AIGC) within every institution comprising representatives from academia, administration, ICT, student body, and external stakeholders.
- Align institutional AI governance with the Zimbabwe Cyber and Data Protection Act, the National AI Strategy, and relevant international instruments.
- Build a mandatory AI impact assessment protocol for all new AI systems proposed for institutional deployment.

Execution

- MHTEISTD to gazette this framework as a regulatory instrument within 6 months of adoption.
- ZIMCHE to incorporate AI governance compliance as a requirement in institutional accreditation and quality audits.
- Each institution to appoint a Chief AI Officer (CAIO) or designate an existing senior official with AI governance responsibilities.
- Develop a Zimbabwe Higher Education AI Register of information hub for AI tools in use across institutions that should be updated biannually.
- Review and amend the Zimbabwe Council for Higher Education Act (Ch. 25:27) to explicitly address AI deployment and governance.

Responsible Parties

- Ministry of Higher and Tertiary Education Innovation Science and Technology Development
- Zimbabwe Council for Higher Education
- Institutional Councils and Executive Management

Success Indicators

- 100% of accredited institutions should have an AI governance policy within 24 months of adoption.
- National AI in Higher Education Advisory Board operational within 12 months.
- AI governance compliance should be included in ZIMCHE audit frameworks by Year 1.

5.6.2 Second Pillar: Responsible AI Literacy, Authentic Scholarship and Digital Ethics

Thematic Cluster: TC2: Ethical Responsibility, Integrity and Data Privacy

Rationale

Academic integrity was among the most prominently raised concerns across all participant categories, students, lecturers, and administrators alike. Participants from both public and private universities reported widespread instances of AI-generated content submitted as original student work, with little institutional recourse due to nonexistent policies. The dark side of AI integration including plagiarism, diminished critical thinking, and intellectual dishonesty demands a dedicated ethical governance pillar. This pillar also addresses the normative isomorphic pressure from professional and academic standards bodies.

Strategic Priorities

- Develop a Zimbabwe Higher Education AI Academic Integrity Code (ZHEAAIC) that defines permissible and impermissible uses of AI in teaching, learning, assessment, and research.
- Integrate AI ethics education as a mandatory component of all undergraduate and postgraduate programmes.
- Create Institutional AI Ethics Steering Committees responsible for investigating academic integrity violations involving AI.
- Enforce explicit AI-use disclosure in all academic submissions at institutional level.
- Promote a culture of responsible AI citizenship among all members of the higher education community.

Execution

- Develop and distribute an AI Academic Integrity Guidelines document to all institutions by Year 1.

- Mandate AI literacy and ethics modules in all undergraduate programmes by Year 2.
- Build AI content detection tools and invest in staff upskilling in their application.
- Establish a biannual AI ethics symposium for faculty and student engagement.
- Review institutional assessment regulations to include AI-use disclosure requirements.
- Develop a typology of AI violations and associated institutional disciplinary responses.

Responsible Parties

- Registrars, Faculty Deans, Department Chairpersons, Academic Ethics Committees, Student Affairs Offices

Success Indicators

- AI Academic Integrity Code to be adopted by all institutions within 18 months of adoption
- AI literacy modules delivered in at least 80% of undergraduate programmes by Year 3.
- Institutional AI Ethics Steering Committees to be established and operationalised across all institutions by Year 2.

5.6.3 Third Pillar: Information Governance and Data Protection

Thematic Cluster: TC2: Ethical Responsibility, Integrity and Data Confidentiality

Rationale

ICT Directors and Registrars across the study clusters expressed significant concerns about institutional data being fed into commercial AI platforms without clear data-sharing agreements or privacy safeguards. The lack of clarity around ownership of AI-generated academic content and associated intellectual property implications also emerged as critical. This pillar operationalises the Zimbabwe Cyber and Data Protection Act (Chap. 12:07) within the higher education context and addresses IP considerations under the Copyright and Neighbouring Rights Act (Chap. 26:05).

Strategic Priorities

- Establish institutional data governance frameworks that regulate how student and staff data may be processed by AI systems.
- Develop institutional AI data classification policies that categorise data by sensitivity and govern its permissible use in AI applications.
- Clarify intellectual property rights pertaining to AI-generated academic outputs including research, creative works, and innovations.

- Implement technical and organisational cybersecurity measures to protect AI systems and associated data from breaches.
- Ensure all AI vendor contracts include clear data sovereignty, data residency, and confidentiality compliance clauses.

Execution

- Development of a model AI Data Governance Policy for HE institutions by the MHTEISTD within Year 1.
- Commissioning a national review of Zimbabwe's Copyright and Neighbouring Rights Act (Ch. 26:05) to address AI-generated content ownership by Year 2.
- Require all AI tools used in institutions to undergo a Data Protection Impact Assessment (DPIA) prior to deployment.
- Train institutional Data Protection Officers (DPOs) in AI-specific data privacy risks and compliance requirements.
- Establish a national incident reporting protocol for AI-related data breaches in higher education.

Responsible Parties

- MHTEISTD, Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ), Institutional Data Protection Officers, Legal Counsel

Success Indicators

- 100% of institutions have AI data governance policies by Year 2.
- All AI systems in institutional use have undergone DPIA by Year 2.
- National AI-IP guidance document published and disseminated by Year 2.

5.6.4 Fourth Pillar: Digital Infrastructure, Connectivity and Equitable Access

Thematic Cluster: TC3: Infrastructure, Access and Equity

Rationale

Infrastructure deficits emerged as the single most frequently cited constraint across all participant categories and all five research clusters. Students and lecturers from institutions in peri-urban and rural areas reported unreliable internet connectivity, frequent power outages, aging hardware, and insufficient device access as fundamental barriers to AI participation. The risk of entrenching existing inequalities through a technologically bifurcated system where urban institutions benefit from AI while rural ones are excluded was a prominent theme from interviews. Equitable infrastructure investment is a prerequisite for all other pillars.

Strategic Priorities

- Achieve minimum broadband connectivity standards across all higher and tertiary education institutions nationally by 2027.
- Develop a national Higher Education Technology Infrastructure Investment Plan (HETIIP) to address hardware, software, and connectivity gaps.
- Ensure all institutions have access to reliable, uninterrupted electrical power through a combination of grid improvements and renewable energy solutions.
- Establish a device access programme to eliminate student hardware poverty as a barrier to AI participation.
- Develop cloud-first and low-bandwidth AI solutions appropriate to Zimbabwe's infrastructure realities.

Execution

- Conduct a national baseline assessment of digital infrastructure across all accredited institutions within 6 months.
- Negotiate preferential broadband pricing for higher education institutions with telecommunications providers under a national HE ICT compact.
- Allocate dedicated budget lines for AI infrastructure in the national higher education budget from Year 1.
- Partner with the private sector and development partners to fund solar and battery backup infrastructure at institutions in energy-insecure areas.
- Establish an HE AI Technology Fund for pooled procurement of AI tools and platforms at reduced cost.
- Prioritise development of offline-capable and low-data AI educational tools for rural and peri-urban institutions.

Responsible Parties

- MHTEISTD, Ministry of Finance, Economic Development and Investment Promotion, POTRAZ, Institutional Management, Private Sector Partners, Development Partners

Success Indicators

- 90% of institutions meeting minimum broadband standards by 2027.
- National HETIIP published and funded by Year 1.
- Student-to-device ratio of 1:1 achieved at all institutions by 2030.
- Solar/renewable energy installations at all rural and peri-urban institutions by 2028.

5.6.5 Fifth Pillar: Capacity Building, Training and Professional Development

Thematic Cluster: TC4: Human Capital, Institutional Capacity & Professional Development

Rationale

A pervasive AI capacity gap was identified across all institution types and participant roles. Lecturers reported lacking pedagogical knowledge to integrate AI into their teaching, while administrators acknowledged using AI tools in an ad hoc, uninformed manner. Department Chairpersons and Deans highlighted the absence of structured professional development programmes in AI. The finding corroborates normative isomorphic pressures: institutions increasingly feel pressure to professionalise their AI use but lack the capacity to do so. This pillar addresses the human capital foundation without which all other pillars cannot be operationalised.

Strategic Objectives

- Establish a National Higher Education AI Capacity Building Programme (NHEACBP) coordinated by MHTEISTD.
- Mandate minimum AI literacy standards for all academic and administrative staff at higher education institutions.
- Develop specialised AI training pathways for ICT Directors, AI Centre Directors, and institutional AI governance personnel.
- Integrate AI pedagogy into the Postgraduate Diploma in Education (PGDE) and all teacher preparation curricula at teacher training colleges.
- Cultivate communities of practice for AI in HE across institutions, disciplines, and sectors.

Execution

Develop a Zimbabwe Higher Education AI Literacy Framework (ZHEALF) defining competency levels for different staff roles by Year 1.

- Partner with national and international universities, tech companies, and the African Union to deliver certified AI professional development programmes.
- Establish AI Innovation Hubs at a minimum of one public university per province, serving as regional capacity building nodes.
- Require all academic staff to complete a minimum AI literacy certification (equivalent to 20 hours of structured learning) by Year 3.
- Develop a train-the-trainer programme to build internal institutional AI facilitation capacity.
- Create an online National AI in HE Professional Development Platform providing open-access learning resources.

Responsible Parties

- MHTEISTD, ZIMCHE, Institutional Human Resources Divisions, ICT Directorates, AI Centres

Success Indicators

- ZHEALF published and adopted by Year 1.
- 80% of academic staff completing AI literacy certification by Year 4.
- AI Innovation Hubs established in at least 8 provinces by 2028.
- National AI Professional Development Platform operational with 5,000 + active users by Year 3.

5.6.6 Sixth Pillar: Curriculum Integration and Pedagogical Innovation

Thematic Cluster: TC5: Pedagogical Innovation, Curriculum Reform and Research

Rationale

Participants across all categories from students to Faculty Deans identified curricular rigidity as a significant impediment to meaningful AI integration. Lecturers reported that existing curriculum frameworks, last revised before the AI revolution accelerated, contain no provisions for AI-enhanced delivery, AI-assisted assessment, or AI-focused content. Students, particularly from polytechnic and technical colleges, expressed the desire to develop AI-relevant competencies aligned with the global digital labour market. This pillar addresses the Education 5.0 mandate for innovation and industrialisation within a structured pedagogical framework.

Strategic Priorities

- Revise national higher education curriculum frameworks to embed AI competencies across all disciplines.
- Develop discipline-specific AI integration guidelines for teaching, learning, and assessment.
- Promote AI-enabled personalised and adaptive learning approaches across institutions.
- Establish standards for AI-assisted assessment that preserve academic integrity and learning validity.
- Align curriculum content with national digital labour market needs and the Education 5.0 innovation mandate.

Execution

- Commission a national curriculum review to integrate AI competencies into all programmes by Year 2.
- Develop a Zimbabwe Higher Education AI Curriculum Integration Guide for faculty by Year 1.

- Pilot AI-assisted personalised learning platforms in partnership with edtech providers at 5 institutions by Year 2.
- Develop AI assessment guidelines that specify permissible AI assistance levels for different assessment types (formative, summative, research).
- Establish an annual AI Pedagogy Conference to share best practice and innovation across institutions.
- Require programme review boards to include an AI integration assessment as part of all curriculum review cycles.

Responsible Parties

- ZIMCHE Curriculum Division, Academic Affairs Offices, Faculty Deans, Lecturers, Edtech Partners

Success Indicators

- AI competencies embedded in 100% of programmes curricula by Year 3.
- AI Curriculum Integration Guide distributed to all institutions by Year 1.
- 5 personalised learning pilots completed with evaluation reports by Year 3.

5.6.7 Seventh Pillar: AI-Enabled Research, Innovation and Knowledge Generation

Thematic Cluster: TC5: Pedagogical Innovation, Curriculum Reform and Research

Rationale

Directors of Research & Innovation and Directors of AI Centres across study clusters expressed frustration at the untapped potential of AI to accelerate research output in Zimbabwe's universities. Participants noted that limited computing infrastructure, inadequate research data management systems, and a lack of AI research literacy among postgraduate students are significant bottlenecks. Given Zimbabwe's Education 5.0 ambition to position universities as engines of industrialisation and innovation, strengthening AI's role in the research enterprise is strategically essential.

Strategic Priorities

- Create AI as a core enabler of Zimbabwe's national higher education research and innovation agenda.
- Create ethical frameworks and guidelines for AI's use in academic research, including issues of authorship, data fabrication, and reproducibility.
- Build institutional high-performance computing (HPC) and research data infrastructure to support AI-driven research.

- Foster industry-academia-government AI research partnerships aligned with national development aspirations.
- Promote AI literacy among postgraduate researchers as a core research competency.

Execution

- Build a National Higher Education AI Research Ethics and Authorship Policy by Year 1.
- Create an inter-university High-Performance Computing facility accessible to all institutions by Year 3.
- Create a Zimbabwe Higher Education AI Research Fund with annual grants for AI-focused research projects.
- Require all higher education institutions to include AI literacy in postgraduate research methodologies courses by Year 2.
- Establish formal AI research partnerships with industry through a structured Industry-University AI Collaboration Programme.
- Register Zimbabwe with the African Union's AI research network and relevant international bodies.

Responsible Parties

- MHTEISTD, Research Councils, Directorates of Research & Innovation, AI Centres, Industry Partners

Success Indicators

- National AI Research Ethics Policy published by Year 1.
- Inter-university HPC facility operational by Year 3.
- 10 funded AI research projects operational by Year 3.
- AI methodologies embedded in postgraduate training at 100% of institutions by Year 3.

5.6.8 Eight Pillar: Monitoring, Evaluation and Continuous Improvement

T**hematic Cluster: TC5: Pedagogical Innovation, Curriculum Reform and Researc**h

Rationale

Multiple participants particularly those in senior institutional roles cautioned that policy frameworks in Zimbabwean higher education often suffer from weak implementation and absent evaluation mechanisms. This pillar institutionalises a culture of evidence-based policy improvement by establishing robust monitoring and evaluation (M&E) systems, regular stakeholder consultations, and biennial framework review cycles. It reflects the adaptive, learning-oriented approach required to keep pace with the rapid evolution of AI technologies.

Strategic priorities

- Create a national Monitoring and Evaluation system for tracking AI policy execution across the higher education sector.
- Build institution-level AI implementation scorecards with standardised key performance indicators (KPIs).
- Institutionalise a two-year cycle framework review that captures stakeholder feedback, new evidence, and emerging AI capabilities
- Publish annual national AI in Higher Education progress reports for public accountability.
- Foster a culture of reflective practice and research-backed AI policy adaptation at all institutional levels.

Execution

- Construct a Zimbabwe Higher Education AI M & E Framework with KPIs aligned with each of the eight pillars by Year 1.
- ZIMCHE to include AI policy compliance in biennial institutional audit cycles beginning Year 2.
- Establish an Annual National AI in Higher Education Stakeholder Forum for review and regulatory dialogue.
- Publish an Annual Zimbabwe Higher Education AI Implementation Report from Year 2.
- Administer a comprehensive mid-term review of the framework in Year 3 and a full review in Year 5.
- Build an AI Policy Feedback Mechanism accessible to students, staff, and the public year-round.

Responsible Parties

- MHTEISTD, ZIMCHE, National AI Advisory Board, Institutional AI Governance Committees, Stakeholder Forums

Success Indicators

- M&E Framework published and pilot-tested by end of Year 1.
- Annual AI progress reports published from Year 2 onwards.
- Stakeholder Forum convened annually with at least 50 representatives per forum.
- Mid-term review completed by end of Year 3 with updated action plan.

5.7 Section 6: Stakeholder Roles and Responsibilities

Effective implementation of this framework requires clearly defined roles and responsibilities of the stakeholders throughout the Higher education sector as detailed in Table 6.

Table 6
Stakeholder Roles and Responsibilities

Stakeholder	Key responsibilities
MHTEISTD	Gazette and enforce the framework; Lead National Higher Education AI Board (NAHEAB); Coordinate national implementation; Secure funding; Represent Zimbabwe's HE in international AI governance forums.
ZIMCHE	Integrate AI governance in accreditation and audit standards; Certify AI-compliant programmes; Publish compliance reports.
Institutional Councils (Boards)	Adopt and approve institution-specific AI policies; Allocate institutional budgets for AI; Ensure senior leadership AI governance accountability
Vice Chancellors / Principals	Champion AI transformation; Appoint Chief AI Officers (CAIOs); Lead institutional AI steering committees; Ensure policy implementation.
AI Governance Committees (AIGC)	Develop institutional AI policies; Review AI system deployments; Handle AI ethics complaints; Report to councils.
ICT Directors & AI Centre Directors	Lead AI system selection and deployment; Conduct DPIAs; Maintain the institutional AI register; Train staff in AI tools.
Faculty Deans & Dept. Chairpersons	Oversee AI integration in the curriculum; Ensure academic staff AI literacy compliance; Enforce AI academic integrity standards.
Lecturers & Academic Staff	Adopt AI-enhanced pedagogical practices; Complete AI literacy certification; Enforce integrity policies in assessments; Contribute to AI research
Students	Students are expected to apply AI as a tool to advance learning and not as a replacement for critical thinking. Students to comply with disclosure standards and actively participate in AI governance through student representation bodies.
Private Sector & Industry	Co-fund AI infrastructure; Provide internship and research partnership opportunities; Supply AI tools and training at preferential rates.
Development Agencies	Fund AI capacity building and infrastructure projects; Share international best practice; Support monitoring and evaluation activities.
Source: Research data	

6. Limitations and Future Study

This study has several limitations worth acknowledging. The qualitative, purposive sampling design, while appropriate for exploratory policy research, restricts statistical generalisability across Zimbabwe's diverse higher education landscape, particularly regarding vocational training centres and rural institutions such as teacher training colleges, which were underrepresented. The concentration of participating institutions in urban and peri-urban centres may have skewed findings toward better-resourced settings, potentially obscuring the deeper challenges faced by remote institutions. Additionally, the rapid evolution of AI technology poses an obsolescence risk to any framework developed today, while the study's exclusive focus on higher and tertiary education leaves the equally

affected primary and secondary sectors unaddressed. Student voices, though included, were comparatively underrepresented relative to management and academic staff. Future research should therefore pursue mixed-methods or quantitative approaches to statistically validate these thematic findings, alongside longitudinal studies to track policy implementation outcomes. Amplifying student perspectives and conducting comparative studies with peer African countries would further amplify the framework's applicability, generalisability, and contextual transferability across the continent.

7. Study Implications

The study's most critical policy implication is the urgent need for a formalised, legally binding AI regulatory framework for Zimbabwe's higher and tertiary education sector, given that the Zimbabwe Council for Higher Education Act (Chap. 25:27) is entirely silent on AI governance despite widespread AI deployment already occurring across institutions. The Ministry of Higher and Tertiary Education, Innovation, Science, and Technology Development bears primary responsibility for accelerating AI Policy Framework development and deployment for uniform governance standards across all accredited public and private higher education institutions. Encouragingly, alignment with the existing Cyber and Data Protection Act (Chap. 12:07) and Statutory Instrument 155 of 2024 provides a ready legislative foundation for AI-specific data governance regulations, promoting a faster regulatory response without requiring entirely new primary legislation. The Zimbabwe higher education sector regulator ZIMCHE should equally evolve its accreditation and institutional audit frameworks to incorporate AI governance compliance as a substantive criterion, without which any national policy framework risks remaining an aspirational document rather than an operationalised instrument. Accordingly, the Zimbabwe Council for Higher Education Act itself requires amendment to explicitly address AI deployment. At the institutional level, each higher education institution is expected to establish an AI Governance Committee and appoint a Chief AI Officer or equivalent senior official within a specified timeframe, thereby creating the governance architecture necessary to translate national policy into context-responsive implementation

8. Conclusion

The development of an empirical, context-specific proposed Artificial Intelligence Policy Framework for Zimbabwe's higher and tertiary education sector presents both an urgent national imperative and a timely scholarly contribution. The current study situated in qualitative discourse from 126 participants purposively selected from across the study clusters, has demonstrated that AI use is already widespread in Zimbabwe’s higher and tertiary education sector, operating in an unregulated landscape that exposes institutions, staff, and students to significant ethical, legal, academic, and infrastructural risks. The findings confirm that AI integration in Zimbabwe's higher education sector is characterised by widespread and growing AI adoption occurring in the nonexistence of governance frameworks, a situation that compromises sustainable AI development and deployment. From the thematic analysis performed, governance, ethics, infrastructure, capacity and pedagogy emerged as the critical dimensions in AI policy in education, and collectively indicate that the sector faces an urgent turning point where continued policy inaction is no longer justifiable. The eight-pillar AI Policy Framework proposed in this

study offers a structured, sector coordinated, and institutionally actionable response to this challenge. Situated in Institutional Theory and aligned with Zimbabwe's national development instruments (National AI Strategy, Education 5.0, the Cyber and Data Protection Act, the National ICT Policy 2022–2027, and Smart Zimbabwe 2030), the framework is poised to be adaptive to the country's socioeconomic, cultural, and infrastructural realities. The framework's ten guiding principles, ranging from human-centredness and equity to data sovereignty and collaborative governance, reflect the stakeholder sentiments across the institutional hierarchy and are aligned with the global AI ethics standards including the UNESCO Recommendation on AI in Education (2021) and the 2024 African Union AI Continental Strategy. The framework's proposed implementation timeline (2026–2030), with biennial review cycles, acknowledges the dynamic nature of AI technologies and the necessity of adaptive governance. Finally, Zimbabwe's higher education institutions cannot continue to be passive consumers of imported AI innovations. Instead, Zimbabwe's higher education sector must become active architects of a context specific AI-enabled educational future that accelerates the nation's development aspirations.

Declarations

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Author Contribution

Conceptualisation - FC; EM, CC; Literature Review - EM, TK & FC; Methodology - FC;TT Analysis - FC, EM, CC. All authors reviewed the manuscript

Data Availability:

The data supporting the findings of the present study are not publicly available but are available from the corresponding author upon reasonable request as they consist of interview transcripts that contain information that can compromise participants' privacy and confidentiality in accordance with the Ethical Clearance approved by the Midlands State University Ethics Review Board (FBS/002/2025 and the Informed Consent provided by the study participants.

References

1. Ahmed SK, Mohammed RA, Nashwan AJ, Ibrahim RH, Abdalla AQ, Ameen M, B. M., Khdhir RM (2025) Using thematic analysis in qualitative research. J Med Surg Public Health 6:100198. https://doi.org/10.1016/j.glmedi.2025.100198

2. Balalle H, Pannilage S (2025) Reassessing academic integrity in the age of AI: A systematic literature review on AI and academic integrity. Social Sci Humanit Open 11:101299. https://doi.org/10.1016/j.ssaho.2025.101299
3. Bond M, Khosravi H, De Laat M, Bergdahl N, Negrea V, Oxley E, Pham P, Chong SW, Siemens G (2024) A meta systematic review of artificial intelligence in higher education: a call for increased ethics, collaboration, and rigour. Int J Educational Technol High Educ 21(1):4. https://doi.org/10.1186/s41239-023-00436-z
4. Boustani NM, Sidani D, Boustany Z (2024) Leveraging ICT and Generative AI in Higher Education for Sustainable Development: The Case of a Lebanese Private University. Administrative Sci 14(10):251. https://doi.org/10.3390/admsci14100251
5. Braun V, Clarke V (2006) Using thematic analysis in psychology. Qualitative Res Psychol 3(2):77–101. https://doi.org/10.1191/1478088706qp063oa
6. Brynjolfsson E, Li D, Raymond L (2023) *Generative AI at Work*. https://doi.org/10.3386/w31161
7. Chitanana L (2023) Parents' Experience with Remote Learning during COVID-19 Lockdown in Zimbabwe. J Open Flex Distance Learn 26(2):75–90. https://doi.org/10.61468/jofdl.v26i2.529
8. Dempere J, Modugu K, Hesham A, Ramasamy LK (2023) The impact of ChatGPT on higher education. *Frontiers in Education*, *8*. https://doi.org/10.3389/feduc.2023.1206936
9. DiMaggio PJ, Powell WW (1983) The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. Am Sociol Rev 48(2):147. https://doi.org/10.2307/2095101
10. Cyber and Data Protection Act (2021) https://zimlii.org/akn/zw/act/2021/5/eng@2022-03-11/source.pdf
11. Copyright and Neighbouring Rights Act Chap 26:05 https://zimlii.org/akn/zw/act/2000/11/eng@2004-09-10/source
12. Falcão TP, Mello RF, Rodrigues RL, Diniz JRB, Tsai Y-S, Gašević D (2020) Perceptions and expectations about learning analytics from a brazilian higher education institution. *Proceedings of the Tenth International Conference on Learning Analytics & Knowledge*, 240–249. https://doi.org/10.1145/3375462.3375478
13. Floridi L, Cowls J, Beltrametti M, Chatila R, Chazerand P, Dignum V, Luetge C, Madelin R, Pagallo U, Rossi F, Schafer B, Valcke P, Vayena E (2018) AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. Mind Mach 28(4):689–707. https://doi.org/10.1007/s11023-018-9482-5
14. Funa AA, Gabay RAE (2025) Policy guidelines and recommendations on AI use in teaching and learning: A meta-synthesis study. Social Sci Humanit Open 11:101221. https://doi.org/10.1016/j.ssaho.2024.101221
15. Gimpel H, Hall K, Decker S, Eymann T, Gutheil N, Lämmermann L, Braig N, Maedche A, Röglinger M, Ruiner C, Schoch M, Schoop M, Urbach N, Vandirk S (2025) Using Generative AI in Higher Education: A Guide for Instructors. J Inform Syst Educ 36(3):237–256. https://doi.org/10.62273/QLLG7172

16. Grassini S (2023) Shaping the Future of Education: Exploring the Potential and Consequences of AI and ChatGPT in Educational Settings. Educ Sci 13(7):692. https://doi.org/10.3390/educsci13070692
17. Guettala M, Bourekkache S, Kazar O, Harous S (2024) Generative Artificial Intelligence in Education: Advancing Adaptive and Personalized Learning. Acta Informatica Pragensia 13(3):460–489. https://doi.org/10.18267/j.aip.235
18. Humble N (2025) Higher Education < scp>AI Policies—A Document Analysis of University Guidelines. Eur J Educ 60(3). https://doi.org/10.1111/ejed.70214
19. Kasneci E, Sessler K, Küchemann S, Bannert M, Dementieva D, Fischer F, Gasser U, Groh G, Günnemann S, Hüllermeier E, Krusche S, Kutyniok G, Michaeli T, Nerdel C, Pfeffer J, Poquet O, Sailer M, Schmidt A, Seidel T, Kasneci G (2023) ChatGPT for good? On opportunities and challenges of large language models for education. Learn Individual Differences 103:102274. https://doi.org/10.1016/j.lindif.2023.102274
20. Khazanchi R, Di Mitri D, Drachsler H (2025) The Effect of < scp>AI -Based Systems on Mathematics Achievement in Rural Context: A Quantitative Study. J Comput Assist Learn 41(1). https://doi.org/10.1111/jcal.13098
21. Kitamura FC (2023) ChatGPT Is Shaping the Future of Medical Writing But Still Requires Human Judgment. Radiology 307(2). https://doi.org/10.1148/radiol.230171
22. Labour Act Chap 28:01 https://www.veritaszim.net/sites/veritas_d/files/Labour%20Act%20Cap%2028.01.pdf
23. Martínez-Ferrero J, García-Sánchez I-M (2017) Sustainability assurance and assurance providers: Corporate governance determinants in stakeholder-oriented countries. J Manage Organ 23(5):647–670. https://doi.org/10.1017/jmo.2016.65
24. Meyer JW, Rowan B (1977) Institutionalized Organizations: Formal Structure as Myth and Ceremony. Am J Sociol 83(2):340–363. https://doi.org/10.1086/226550
25. Moorhouse BL, Yeo MA, Wan Y (2023) Generative AI tools and assessment: Guidelines of the world's top-ranking universities. Computers Educ Open 5:100151. https://doi.org/10.1016/j.caeo.2023.100151
26. Moyo J, Watyoka N, Chari F (2022) Challenges in the Adoption of Artificial Intelligence and Machine Learning in Zimbabwe's Insurance industry. *2022 1st Zimbabwe Conference of Information and Communication Technologies (ZCICT)*, 1–6. https://doi.org/10.1109/ZCICT55726.2022.10045910
27. Munga J, Sylvester Quansah S (2025) *Understanding Africa's AI Governance Landscape: Insights From Policy Practice and Dialogue*. Technical Report. Carnegie Endownment for International Peace
28. Munga J, Quansah S (2025) Understanding Africa's AI Governance Landscape
29. Insights F Policy, Practice and Dialogue
30. National development strategy (NSD1) (2021–2025) https://www.mines.gov.zw/wp-content/uploads/2023/03/National-Development-Strategy-Presentation_NDS1-1.pdf

31. National ICT (2022–2027) Policy
32. Ndlovu M, Sibanda MN (2022) Digital Technologies and the Changing Journalism Cultures in Zimbabwe: Examining the Lived Experiences of Journalists Covering the COVID-19 Pandemic. Digit Journalism 10(6):1059–1078. https://doi.org/10.1080/21670811.2021.1976065
33. Rigley E, Bentley C, Krook J, Ramchurn SD (2024) Evaluating international AI skills policy: A systematic review of AI skills policy in seven countries. Global Policy 15(1):204–217. https://doi.org/10.1111/1758-5899.13299
34. Sengar SS, Hasan A, Bin, Kumar S, Carroll F (2024) Generative artificial intelligence: a systematic review and applications. Multimedia Tools Appl 84(21):23661–23700. https://doi.org/10.1007/s11042-024-20016-1
35. Singh PD (2024) *Generative AI through the Lens of Institutional Theory*. 1–10. https://doi.org/https://dx.doi.org/10.2139/ssrn.4953174
36. Temper M, Tjoa S, David L (2025) Higher Education Act for AI (HEAT-AI): a framework to regulate the usage of AI in higher education institutions. *Frontiers in Education*, *10*. https://doi.org/10.3389/feduc.2025.1505370
37. Wu H, Han H, Wang X, Sun S (2020) Research on Artificial Intelligence Enhancing Internet of Things Security: A Survey. IEEE Access 8:153826–153848. https://doi.org/10.1109/ACCESS.2020.3018170
38. Yan L, Sha L, Zhao L, Li Y, Martinez-Maldonado R, Chen G, Li X, Jin Y, Gašević D (2024) Practical and ethical challenges of large language models in education: A systematic scoping review. Br J Edu Technol 55(1):90–112. https://doi.org/10.1111/bjet.13370
39. Zeadally S, Tsikerdekis M (2020) Securing Internet of Things (IoT) with machine learning. Int J Commun Syst 33(1). https://doi.org/10.1002/dac.4169
40. Zheng L, Niu J, Zhong L, Gyasi JF (2023) The effectiveness of artificial intelligence on learning achievement and learning perception: A meta-analysis. Interact Learn Environ 31(9):5650–5664. https://doi.org/10.1080/10494820.2021.2015693
41. Zimbabwe Council for Higher Education Act Chap 25:27. https://zimlii.org/akn/zw/act/2006/1/eng@2016-12-31
42. Zuboff S (2019) *The Age of Surveillance Capitalism*: The Fight for a Human Future at the New Frontier of Power. PublicAffairs

Table 1

Table 1 is available in the Supplementary Files section.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- AppendixAAIPolicyParticipantsDemographicsTableJune2026.docx

- AppendixBEthicalClearanceAIPolicyHigherEducationscan0031.pdf
- AppendixCConsentAIHigherandtertiaryeducation25June2025.pdf
- AppendixDResearchGrantDrFChokera0001.pdf