THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

NATIONAL GUIDELINES FOR ARTIFICIAL INTELLIGENCE IN EDUCATION

January, 2025

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Table of Contents

FOREWORD

In recent years, the Government of the United Republic of Tanzania has embarked on significant reforms in the education sector, focusing on enhancing the quality, accessibility, and relevance of education. At the core of these efforts is the National Digital Education Strategy 2024/25 - 2029/30, established by the Ministry of Education, Science and Technology (MoEST). The Strategy is grounded in the objectives of key national policies, including the Tanzania National ICT Policy 2016 and the Education and Training Policy of 2014 (revised in 2023). These policies underscore the critical role of digital technologies in elevating the quality of education and training, while also empowering Tanzanians with the skills needed to thrive in the job market and foster self-employment.

Recognizing the transformative potential of emerging technologies, particularly Artificial Intelligence (AI), MoEST has developed the National Guidelines for AI in Education. These Guidelines provide comprehensive guidance on the effective, ethical, and responsible adoption, use, and development of AI within the education sector. The significance of these Guidelines is far-reaching: it ensures that AI and related technologies are integrated into the education system in ways that enrich learning experiences and improve outcomes. Moreover, it addresses the ethical considerations associated with these technologies, including data privacy and security, promoting their responsible use. Lastly, it prepares educators and learners for a future where AI and other technologies will play a critical role across various industries, thereby enhancing their employability.

The development of these Guidelines is in line with the Tanzania National ICT Policy 2016, which emphasizes the importance of building a knowledge-based economy through the integration of ICT in various sectors, including education. It also aligns with the National Digital Education Strategy 2024/25 – 2029/30, which advocates for responsible AI development, ethical use, and transparency. These frameworks collectively ensure that the integration of AI in education is both strategic and sustainable, supporting Tanzania's broader goals for socio-economic transformation.

This initiative is both timely and crucial, aligning with international statements on AI and education. The Guidelines resonate with the Beijing Consensus on Artificial Intelligence and Education 2019, which emphasizes the need for education systems to adapt to the rapid advancements in AI technology and its implications for the workforce. Additionally, the Guidelines are consistent with the African Union's Continental Artificial Intelligence Strategy 2024,

which seeks to harness the potential of AI and other emerging technologies for sustainable development across the continent. It also reflects UNESCO's numerous statements on AI in education, the ethical use of AI, and the importance of sound policy and governance (UNESCO 2020, 2021a, 2021b, 2023a, 2023b, 2023c).

The Guidelines are designed for a wide range of stakeholders, including educators, learners, policymakers, developers, parents, and researchers. Educators can use it to effectively integrate AI tools into their teaching methodologies, while policymakers can ensure that AI initiatives align with national educational objectives. Technology developers and researchers can reference the Guidelines to create ethical and effective AI applications. If adopted and implemented as intended, the Guidelines has the potential to significantly benefit the Tanzanian education system, leading to improved educational outcomes, enhanced equity and accessibility, and better preparation of learners for the future workforce.

As we embark on this transformative journey, I urge all stakeholders to embrace the Guidelines and work collaboratively to ensure its successful implementation. Together, let us harness the power of AI and other emerging technologies to create an inclusive, equitable, and forward-looking education system that empowers every Tanzanian learner and educator to thrive in the digital age.

Prof. Carolyne I. Nombo
PERMANENT SECRETARY

LIST OF ACRONYMS

AI	Artificial Intelligence
GAI	Generative Artificial Intelligence
MoEST	Ministry of Education, Science and Technology
TVET	Technical and Vocational Education and Training
ANFE	Adult and Non-Formal Education
EMIS	Education Management Information System
HLIs	Higher Learning Institutions
UNESCO	United Nations Educational, Scientific and Cultural Organization
SQA	School Quality Assurance
IT	Information Technology
BEST	Basic Education Statistics
TCU	Tanzania Commission for Universities
NACTVET	National Council for Technical and Vocational Education and Training
PO-RALG	President's Office - Regional Administration and Local Government
GCLA	Government Chemist Laboratory Authority
UDSM	University of Dar es Salaam
SUA	Sokoine University of Agriculture
SUZA	State University of Zanzibar
NM-AIST	Nelson Mandela African Institution of Science and Technology
MU	Mzumbe University
UDOM	University of Dodoma
TIE	Tanzania Institute of Education

DEFINITION OF KEY TERMS

Artificial Intelligence	Simulation of human intelligence in machines, encompassing learning, reasoning, problem-solving, perception, and decision- making.
AI Tools	Software applications or platforms that utilize AI techniques to perform specific tasks or solve particular problems.
AI Infrastructure	Hardware, software, and tools necessary to develop, deploy, and manage AI applications in education.
Capacity Building	Strengthening the knowledge, skills, and resources of individuals and institutions involved in AI education and implementation through training and professional development initiatives.
Curriculum Integration	Incorporating AI-related topics, concepts, methodologies, and skills into educational curricula to equip students with AI knowledge and skills.
Data Privacy and Security	Protecting the confidentiality, integrity, and availability of data processed by AI systems to prevent unauthorized access, use, or disclosure.
Ethical Use of AI	Ensuring AI deployment aligns with moral principles, respects human rights, promotes fairness, transparency, and accountability, and minimizes harm.
Equity and Inclusivity	Ensuring AI benefits are accessible to all individuals, regardless of socio-economic status, geography, gender, ethnicity, or other characteristics.
Generative Artificial Intelligence	Type of AI that can produce different types of content including text, images, audio, video, and synthetic data.
Responsible Stakeholders	Stakeholders who play crucial roles in ensuring the effective, ethical, and

	responsible use of AI technologies in education.
Sustainability of AI Initiatives	Ensuring AI projects are viable, scalable, and environmentally, socially, and economically sustainable over the long term

"The rapid advancement of Artificial Intelligence (AI) is transforming industries globally, driving innovations across various sector"

1. INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) is transforming industries globally, driving innovations across various sectors. In education, AI is enhancing efficiency, reducing costs, and improving outcomes by addressing resource constraints, supporting personalized learning, and promoting inclusivity. AI tools provide individualized learning resources, adaptive assessments, and virtual tutors tailored to each learner's unique needs, while enhancing inclusivity through tools like speech-to- text applications and language translation services that support learners with disabilities. Additionally, AI automates grading, utilizes analytics for timely feedback, and helps educators identify areas needing support, reducing workloads and improving learning outcomes.

Countries such as China, the United States, and Finland have integrated AI into their education systems with significant success. China employs AI for personalized tutoring and learning analytics, the United States creates adaptive learning environments, and Finland focuses on supporting learners with disabilities, enhancing accessibility. These initiatives have improved student engagement, streamlined administrative processes, and made education more efficient and adaptive, demonstrating AI's potential to make education more inclusive and effective globally, particularly in resource-limited settings.

Recognizing the transformative potential of AI and its associated risks, the Ministry of Education, Science, and Technology (MoEST) has developed the National Guidelines for AI in Education. These Guidelines align with the National Digital Education Strategy 2024/25 - 2029/30, which envisions "providing better learning outcomes through a digitally enabled education system." The Strategy outlines the integration of digital technologies, including AI, into all levels of education and training as a key component to enhance the quality and accessibility of learning in Tanzania. Furthermore, the Guidelines align with the National ICT Policy 2016, which emphasizes the need for innovation, capacity building, and ICT integration across sectors, including education, to promote socio-economic development. As stated in the National ICT Policy 2016:

"ICT will be used to enhance learning and teaching by providing equitable access to digital tools and resources." The Guidelines also draw from the National AI Strategy 2024, which aims to create an enabling environment for AI adoption in various sectors, including education, to modernize the economy and improve the quality of life. According to the National AI Strategy: "AI presents opportunities to complement human intelligence, enrich education, and foster innovation for socio-economic growth."

Internationally, the Guidelines resonate with global initiatives such as the Beijing Consensus on Artificial Intelligence and Education (2019), which stresses the need for education systems to adapt to advances in AI technology and address workforce implications. For instance, the Beijing Consensus highlights the importance of "fostering AI literacy and skills to ensure that all individuals are prepared for the future workforce" which aligns with the Guideline's focus on capacity building and inclusivity. The African Union's Continental Artificial Intelligence Strategy 2024 also emphasizes "Harnessing AI to foster sustainable development and bridge educational gaps across the continent" which is reflected in the Guidelines aim to improve accessibility and learning outcomes through AI. Additionally, the Guidelines align with UNESCO's guidelines and strategies on the use of AI in education, AI ethics, and governance (UNESCO 2020, 2021a, 2021b, 2023a).

The National Guidelines for AI in Education are an extension of the core pillars of the National Digital Education Strategy, particularly those focused on emerging technologies, ICT integration in the curriculum, digital assessment, and digital content development. The Strategy emphasizes leveraging emerging technologies, including AI, to improve teaching and learning outcomes, enhance inclusivity, and ensure that education remains relevant in the rapidly evolving digital landscape.

These Guidelines provide a framework for the effective, ethical, and responsible integration of AI tools and applications into Tanzania's education system. It ensures that AI is developed and utilized to enhance learning while addressing ethical and practical concerns such as data privacy, security, and bias. Furthermore, it aligns with the strategic commitment of the government to promote research,

innovation, and capacity building in ICT, ensuring that educators, learners, and institutions are well-equipped to harness the power of AI for educational transformation.

1.1   Objectives

1.1.1   The Main Objective

The objective is to provide guidance on the effective, ethical, secure and responsible development and use of AI tools and applications within Tanzania's education sector.

1.1.2   Specific Objectives

Specifically, these Guidelines aim to:

i.   Support institutions and stakeholders in developing strategies that embrace the ethical use of AI to enhance the quality of teaching and learning outcomes across all educational levels.

ii. Ensure that AI tools and applications are accessible to all learners, including those with disabilities and those from underserved communities.

iii. Set clear protocols for data privacy, security, and ethical considerations to guide the responsible deployment of AI tools in education.

iv. Foster research and innovation and resilience by creating an adaptive and innovative education system that is resilient to future technological changes and capable of preparing learners for the evolving demands of the global economy.

v.   Align AI usage in education with national and international regulations and standards, ensuring compliance with legal and ethical guidelines.

1.2   Scope

These Guidelines offer comprehensive guidance to responsible stakeholders to ensure the effective application of AI across the education sector. It covers pre-primary, primary, secondary, and non-formal education, as well as Technical and Vocational Education and Training (TVET) and Higher Education Institutions.

1.3 Guiding Principles

These Guidelines are built on the following guiding principles:

i.   Ethical Use: Ensuring AI is used transparently, fairly, accountably, and responsibly.

ii.   Equity and Inclusivity: Promoting equal access to AI for all users.

iii. Data Privacy and Security: Protecting personal data and maintaining security.

iv.   Sustainability: Ensuring long-term viability and scalability of AI initiatives.

1.4 Guidelines Context

The National Guidelines for AI in Education serve as a primary implementation tool for both public and private stakeholders regarding the application of AI technologies across all levels of education in Tanzania. Stakeholders are required to align their institutional policies with these Guidelines to ensure effective implementation in the education sector. The governance and management of AI in education are pivotal for achieving the objectives outlined in the Guidelines.

The implementation of the Guidelines will be managed within the existing governance and management structures of the Ministry, closely aligning with Tanzania's National Digital Education Strategy 2024 and the National ICT Policy 2016. The Guidelines support the goals stipulated in the National Digital Education Strategy, which focuses on enhancing digital transformation by integrating AI technologies into the education sector to strengthen digital infrastructure, build capacity among educators and students, and ensure coherence in policy implementation. By embedding AI governance within MoEST's existing frameworks, the Guidelines aim to facilitate the responsible use of AI and reinforce the Strategy's objectives of improving access to quality education. MoEST's departments, units, and regulatory institutions, from the national level down to individual educational institutions such as schools, colleges, and universities, will play an instrumental role in ensuring the responsible and effective implementation of AI

technologies, while addressing ethical, legal, and regulatory considerations.

The AI draft policy emphasizes that to achieve a sustainable AI ecosystem, coordination among stakeholders is essential. The responsible use of AI is highlighted, with attention to ensuring transparency, fairness, and ethical considerations throughout its adoption and deployment. This emphasis is consistent with the Tanzania National ICT Policy 2016, which outlines the importance of an enabling environment for digital technologies that supports socio-economic transformation. The ICT Policy 2016 specifically underlines the role of ICT in education and the need for adequate investment in building the capacity of educators and students, aligning well with the current objectives of the AI Guidelines.
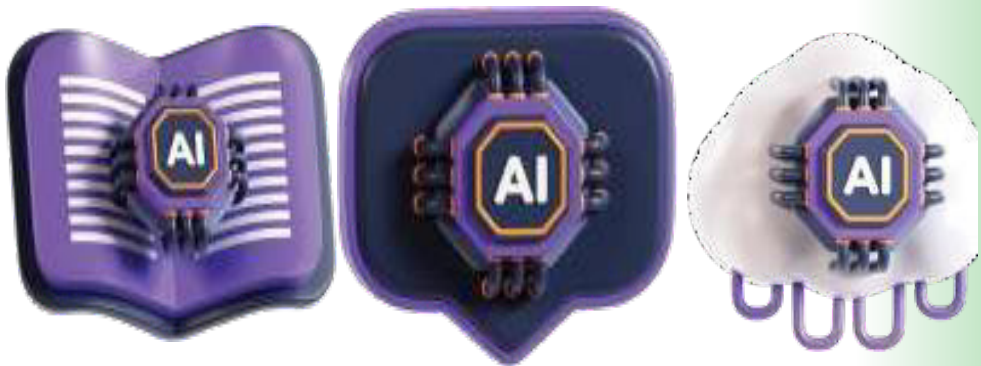
2. DIMENSIONS AND GUIDELINES

The National Guidelines for AI in Education consist of ten dimensions which will enable the successful integration of AI in the education and training sector

2.1 Policy Development and Advocacy

Policy development and advocacy are crucial to establish a coherent framework for the ethical and effective use of AI across primary, secondary, vocational education, teacher education, and universities, guiding educators, administrators, and technology providers towards a consistent and accountable approach to AI integration across all levels of education in Tanzania. Aligning with the Tanzania National ICT Policy 2016 and the National Education Strategy 2024/25 – 2029/30 ensures a harmonized adoption of AI that supports equitable access and sustainable socio-economic development. According to the National ICT Policy 2016, ICTs are central to achieving socio-economic growth, transforming Tanzania into a knowledge-based society. In line with this vision, advocacy for responsible AI use helps raise awareness, build public trust, and

promote equitable, inclusive application of AI in education. Therefore, all education and training stakeholders shall:

i. Formulate institutional policies, guidelines, or frameworks that govern the ethical and responsible use and development of AI tools and applications in teaching, learning, and administrative processes across primary, secondary, vocational education, teachers' education, and universities.

ii. Regularly review and update existing policies to reflect AI advancements and emerging ethical, privacy, and security considerations, ensuring these updates cater to the needs of all education levels, including primary, secondary, vocational, teachers' education, and universities.

iii. Monitor the implementation of these policies across all levels of education, ensuring alignment with national and international standards.

iv. Involve diverse stakeholders, including educators, learners, parents, teacher trainers, AI experts, and policymakers, in policy development processes to foster trust and inclusiveness, ensuring representation from primary, secondary, vocational, teachers' education, and universities.

v. Promote awareness and understanding of responsible AI use through public campaigns, workshops, seminars, and informational materials targeted at all levels of education, from primary to university.

vi. Foster collaboration between government, educational institutions, teacher colleges, vocational training centres, and industry to ensure practical AI policies supported by technological capabilities across all education levels.

vii. Develop feedback mechanisms where stakeholders from all levels of education, including teachers, students, and administrators, can report policy effectiveness and suggest improvements, ensuring a holistic approach to continuous improvement.

2.2 Security, Privacy and Ethics

Ensuring the ethical and responsible use of AI tools and applications in education is crucial to protect the privacy, rights, and dignity of all stakeholders, including learners, educators, and administrative staff. This commitment applies across all levels of education, from primary, secondary schools, teacher education, TVET institutions and universities. Establishing clear ethical guidelines fosters trust and accountability, ensuring that AI is used transparently and responsibly to enhance educational experiences for everyone. To achieve this, all education and training stakeholders shall ensure that:

i.   AI guidelines for education must include ethical principles that ensure fairness, transparency, accountability, respect for privacy, and promote inclusive, equitable learning environments across all educational levels.

ii.   AI tools and applications must comply with data privacy laws and regulations, including obtaining informed consent for data collection and use across all educational levels.

iii. AI tools used in educational institutions must be audited for bias to ensure fair treatment of all stakeholders regardless of background or identity.

iv.   Institutions must establish mechanisms to monitor AI use and designate responsible parties to ensure compliance with ethical guidelines.

v.   Ongoing training on the ethical use of AI must be provided to educators, administrators, and learners across all educational levels.

vi.   Stakeholders must advocate for ethical AI use in education, emphasizing benefits and addressing risks for all educational levels.

vii. Data privacy and security standards must be upheld to protect learners' and educators' personal information across all educational levels.

viii. Ethical AI use should be promoted within the curriculum, teaching learners about data privacy, security, and social implications of AI misuse at all educational levels.

2.3 Teaching and Learning

The use of Artificial Intelligence in education has the potential to significantly enhance the efficiency and effectiveness of teaching and learning processes across primary, secondary, teacher education, TVET, and universities. AI can provide real-time feedback, support differentiated instruction, and help educators better understand individual learning needs. However, it is crucial to implement guidelines to ensure that AI is used inclusively and transparently, preventing misuse and ensuring its benefits are equitably distributed among all learners and educators. To achieve this, all education and training stakeholders shall:

i. AI tools and applications must be accessible to all learners and educators, regardless of socio-economic background or geographical location, to promote fairness and inclusivity.

ii. Use AI tools to provide fair, continuous, and unbiased assessment of student performance to support progress at all educational levels.

iii. Ensure AI tools used in education align with the Tanzanian National Curriculum Framework to support and complement learning objectives.

iv. Integrate AI literacy into curricula at all levels to help learners and educators understand AI's ethical, societal, and technological implications.

v.   Monitor and evaluate the effectiveness of AI tools in teaching and learning by gathering feedback from all stakeholders.

vi.   Use AI to create inclusive learning environments that accommodate diverse learner needs, including those with disabilities.

vii. Provide professional development for educators to effectively integrate AI into teaching and learning at all levels.

2.4   Assessment and Evaluation

Assessment and evaluation are critical components across all levels of education— primary, secondary, TVET, and universities— to leverage the potential of AI tools and applications for personalized, timely, and actionable feedback, enhancing learning outcomes for all learners. AI-driven assessments can facilitate continuous and unbiased evaluations, supporting educators in identifying learners' strengths and areas for improvement. Adopting AI tools in assessments is essential for improving the quality and equity of education; however, unregulated use of AI poses risks such as biased evaluations, breaches of data privacy, and lack of

transparency. The Tanzania National ICT Policy 2016 emphasizes the need for inclusivity and fairness in digital technologies to ensure AI tools do not introduce bias or widen inequalities, while the National Digital Education Strategy 2024/25 - 2029/30 supports enhancing learning quality through ethical AI use that prioritizes privacy, data protection, and inclusivity. To mitigate risks and maximize the benefits, stakeholders must ensure the fair and effective use of AI-driven assessment tools. To achieve this, all education and training stakeholders shall:

i. Ensure AI-driven assessment tools provide fair, unbiased, and accurate evaluations for learners at all educational levels, regardless of their background or identity.

ii. Utilize AI tools to facilitate continuous and formative assessments, offering actionable feedback to learners and educators across primary, secondary, TVET, and university levels.

iii. Implement robust data protection measures to safeguard learners' personal and academic information used in AI assessment tools, ensuring privacy and security.

iv. Ensure transparency in AI assessment tools by providing clear explanations of assessment processes and result determination.

v. Design AI assessment tools to be inclusive and accessible to all learners, including those with disabilities, across all educational contexts.

vi. Establish regular evaluation mechanisms for AI assessment tools to ensure their effectiveness, reliability, and continuous improvement at all levels of education.

vii. Align AI assessment tools with national and international educational standards and curricula to maintain consistency and relevance in evaluations for primary, secondary, teacher education, TVET, and university levels.

viii. Provide professional development opportunities for educators across all education levels on the use of AI-driven assessment tools and interpretation of AI-generated data.

2.5 Capacity Building and Training

Capacity Building and Training is essential for equipping educators, administrators, and learners across primary, secondary, teacher education, TVET, and higher education levels with the necessary skills and knowledge to effectively and ethically use AI in education. Investment in professional development ensures that AI tools and applications are integrated in a manner that maximizes their potential while mitigating risks. In line with the Tanzania National ICT Policy 2016, which emphasizes digital literacy for all, and the National Digital Education Strategy 2024/25 – 2029/30, which focuses on AI skills development. Therefore, all education and training stakeholders shall:

i. Develop continuous professional development programs on AI literacy and ethical use for educators and administrators at primary, secondary, teacher education, TVET, and university levels to ensure they stay updated with evolving technologies.

ii. Provide educators across all education levels with practical AI skills for teaching, assessment, and administrative tasks tailored to their specific context.

iii. Partner with experts to deliver AI training for educators and administrators at primary, secondary, TVET, and

university levels, ensuring relevance to each level's needs.

iv. Incorporate ethics, data privacy, bias mitigation, and accountability in all AI training programs, with examples relevant to learners at each education level.

v. Raise public awareness about AI's role, benefits, and ethical considerations in primary, secondary, teacher education, TVET, and higher education to foster informed communities.

vi. Organize workshops and seminars for practical AI experience for educators and learners at all education levels, ensuring activities are age-appropriate and context-specific.

vii. Promote inclusive professional development on AI to ensure educators and learners from primary, secondary, TVET, and universities have equal opportunities to access AI education.

2.6   Curriculum and Content Development

Integrating AI into curriculum and content development is essential for building a competitive, forward-looking education system that

aligns with global technological advancements. This integration ensures learners at all educational levels – primary, secondary, Technical and Vocational Education and Training (TVET), and universities – are prepared for a future where AI is central across various sectors, significantly enhancing their employability. To achieve this, all education and training stakeholders shall:

i.   Incorporate AI literacy and skills into curricula at all education levels to equip learners with relevant knowledge for current and future job markets.

ii.   Enhance learners' employability by providing practical AI experiences, from basic concepts in primary education to advanced research at university levels.

iii.   Regularly update educational content with the latest AI advancements to ensure it remains current, relevant, and suitable for all education levels.

iv.   Provide ongoing professional development for educators to integrate AI into teaching practices effectively, tailored to each education level.

v.   Use AI tools to create engaging, interactive, and personalized digital content for learners at all educational levels.

vi.   Ensure AI tools are accessible to all learners, including those with disabilities, by designing content compatible with assistive technologies.

vii.   Collect feedback from learners and educators to continuously improve AI-developed content at all educational levels.

viii. Develop guidelines for the ethical use of AI in education, addressing privacy, bias, and data security concerns.

2.7 AI Infrastructure and Access

The successful implementation of AI in education and training hinges on a strong foundation – robust AI infrastructure and equitable access to AI tools and applications. By prioritizing these areas, we can bridge the digital divide, ensuring inclusive access to AI technologies for all learners and educators across different educational levels and regions. Investing in reliable infrastructure and ensuring equitable access strengthens the overall effectiveness and sustainability of AI initiatives in education. To achieve this, all education and training stakeholders across primary, secondary, TVET, and universities should:

i.   Allocate sufficient funding for the development and maintenance of ICT infrastructure required to support AI tools and applications in education and training, ensuring all levels from primary to higher education are well-supported.

ii.   Develop centralized platforms where learners, educators, administrators, and other stakeholders can access and share AI tools and applications efficiently. These platforms should be tailored to meet the diverse needs of primary, secondary, teacher education, TVET, and higher education institutions.

iii. Conduct regular assessments of the existing AI infrastructure to identify areas for improvement and necessary upgrades for all education levels, ensuring that both young learners and advanced students have access to the latest technologies.

iv. Ensure that AI tools and applications are distributed equitably to all stakeholders, including learners and educators in remote and underserved areas, bridging the digital divide across all levels of education.

v. Provide technical support and training for educators, administrators, and curriculum developers to effectively use and manage AI tools and infrastructure, ensuring that these stakeholders at all educational levels are equipped to integrate AI into their teaching and management practices.

vi. Promote sustainable investment practices by considering the long- term costs and benefits of AI infrastructure, including energy-efficient technologies, applicable for all types of institutions from primary schools to universities.

vii. Implement a continuous improvement process to regularly review and update AI infrastructure, ensuring it meets evolving technological and educational needs for primary, secondary, teacher education, TVET, and higher education institutions.

viii. Promote equitable access to AI-powered educational tools and resources to diverse groups of learners, ensuring that differentiated approaches are taken to meet the varying needs of young students, vocational trainees, and university learners.

ix. Encourage inclusive infrastructure planning that considers the specific needs of different education levels, such as age-appropriate tools for primary education, hands-on AI applications for TVET, and advanced AI systems for university-level research and learning.

2.8 Data Use and Management

Effective and ethical data use and management are essential for

ensuring that AI applications in education and training respect the privacy and rights of all stakeholders across primary, secondary, teachers' education, TVET, and university levels. Proper data management practices enable the accurate and responsible use of data to improve educational outcomes, personalize learning experiences, and inform policy decisions. Including this dimension in the guidelines ensures that data collected and used by AI systems is handled securely, transparently, and in compliance with legal and ethical standards. To achieve this, all education and training stakeholders should:

i.   Implement robust data protection policies to ensure the privacy and security of all student and staff data collected and used by AI systems at all levels of education, from primary schools to universities.

ii.   Ensure compliance with national and international data privacy laws and regulations, guaranteeing that data is stored securely and access is restricted to authorized personnel only, regardless of the educational level.

iii.   Provide clear and accessible information about how data will be used, who will have access to it, and the benefits and risks involved, tailored to suit different educational levels.

iv.   Ensure transparency in how data is collected, processed, and used by AI systems, providing stakeholders with clear explanations and documentation appropriate for primary, secondary, teachers' education, TVET, and university contexts.

v.   Establish procedures to ensure the accuracy and integrity of data used in AI applications, including regular audits and validation checks at all educational levels.

vi.   Develop and enforce guidelines for the ethical use of data, ensuring that data is used responsibly and in ways that benefit learners and the educational community at all levels of education.

vii.   Provide training and resources for educators, administrators, and staff on data management best

practices, privacy regulations, and ethical data use, ensuring that these resources are appropriate for each educational level (primary, secondary, TVET, teachers' education, and university).

viii. Regularly review and update data management policies and practices to reflect technological advancements, regulatory changes, and emerging best practices, ensuring applicability across all levels of education.

ix. Ensure that data management procedures are inclusive and consider the specific needs of vulnerable groups at different educational levels, such as young learners in primary education or students in specialized TVET programs.

x. Promote a culture of data literacy among students, educators, and administrative staff, equipping them with the knowledge to understand the significance of data privacy, the ethical implications of data use, and their rights as data subjects across all educational levels.

2.9 Research and Innovation

Research and innovation are essential for advancing the understanding and application of AI in education and training in Tanzania. These efforts ensure that new technologies are effectively integrated and continually improved. By fostering a culture of research and innovation, educational institutions across all levels—primary, secondary, teachers' education, TVET, and universities—can develop cutting-edge AI tools and methodologies that significantly enhance learning experiences and outcomes. To achieve this, all education and training stakeholders should:

i. Encourage and support research initiatives focused on the development and application of AI technologies in education and training at all educational levels, including primary, secondary, teacher education, TVET, and universities.

ii. Promote the development of AI tools and applications that are contextual and relevant to improve teaching and learning for diverse learners across all education levels.

iii. Provide funding and resources for research projects that explore innovative uses of AI to improve teaching and learning outcomes, ensuring that projects cater to the specific needs of primary, secondary, teacher education, TVET, and universities

iv. Establish clear guidelines for conducting AI research, ensuring that studies respect privacy, fairness, and transparency across all education and training contexts.

v. Foster collaboration with local and international academic and research institutions at all education levels to share knowledge, conduct joint research, and develop innovative AI solutions.

vi. Establish partnerships with AI experts, technology companies, and other educational institutions across primary, secondary, teacher education, TVET, and universities to share knowledge, resources, and best practices.

vii. Create platforms and mechanisms for sharing research findings and best practices related to AI in education and training across all educational levels, ensuring accessibility for educators, administrators, and policymakers.

viii. Provide training and development opportunities for researchers and educators at all levels to enhance their skills and knowledge in AI and educational research methodologies.

ix. Foster a culture of continuous improvement, encouraging ongoing research and innovation to adapt AI tools to changing educational needs and contexts across primary, secondary, teacher education, TVET, and university education.

2.10 Collaboration and Partnerships

Collaboration and partnerships are essential for the successful

implementation of AI in education and training across all levels, including primary, secondary, teacher education, TVET, and universities. These collaborations enable the sharing of knowledge, resources, and best practices across different sectors and institutions. Engaging a diverse range of stakeholders, including technology experts, educational researchers, and policymakers, fosters innovation and ensures that AI solutions are effective, ethical, and aligned with educational goals. To achieve this, all education and training stakeholders should:

i. Engage a diverse range of stakeholders, including educators, learners, parents, AI experts, policymakers, and community members, in the development and implementation of AI initiatives, ensuring that the perspectives of all educational levels are represented.

ii. Establish partnerships with leading technology companies to access cutting-edge AI tools, resources, and expertise that can be adapted to the needs of primary, secondary, teacher education, TVET, and university contexts.

iii. Foster collaboration with local and international academic and research institutions to share knowledge, conduct joint research, and develop innovative AI solutions that cater to diverse educational needs.

iv. Participate in international collaborations and networks to stay informed about global trends, best practices, and advancements in AI in education and training across all levels.

v. Engage local communities and industries in AI initiatives to ensure that solutions are relevant, context-appropriate, and address local educational needs in primary, secondary, teacher education, TVET, and higher education settings.

vi. Develop partnerships with industry to provide learners at all levels with real-world learning opportunities and exposure to AI applications in various sectors, from foundational to advanced skills.

vii. Collaborate with other institutions and organizations to

advocate for policies that support the ethical and effective use of AI in education and training, with a focus on inclusivity and equity across all educational levels.

viii.	Foster collaboration with government agencies, private sector partners, and international organizations to secure funding and resources for AI infrastructure applicable to all levels of education, including TVET and universities.

ix.	Improve and encourage national and global representation of diverse groups in AI roles and responsibilities, ensuring that stakeholders from primary to higher education are included.

x.	Establish partnerships with teacher education institutions to ensure that educators are equipped with the necessary skills and knowledge to effectively integrate AI into their teaching practices at all levels.

xi.	Collaborate with TVET institutions to design AI-related curricula that prepare learners with practical skills for the job market, addressing the specific needs of skills-based learning.

xii.	Develop partnerships with educational institutions at all levels to promote the integration of AI into learning processes, ensuring inclusivity and addressing the specific needs of primary, secondary, and tertiary education.

xiii.	Engage with stakeholders in TVET to create AI-driven solutions that align with the specific needs of skills-based learning and industry requirements, providing learners with opportunities to acquire relevant skills for employment.

xiv.	Foster collaboration among universities, teacher education institutions, and TVET to develop AI-based educational resources and tools that are adaptable to different learning environments and learner needs.

3.   THE ROLES OF STAKEHOLDERS

This section outlines stakeholders involved in the implementation of the National Guidelines for AI in Education and states their responsibilities from the national level down to the school level. Since AI is a multidisciplinary issue, the effective implementation of the Guidelines requires a broad involvement of various education and training stakeholders.

3.1   Ministry Responsible for Education, Science and Technology

The Ministry, based on its policy mandates, shall:

i.   Coordinate efforts between various educational institutions, research bodies, and industry partners to promote the ethical use of AI.

ii.   Allocate funding to support AI research, innovation, and implementation in educational institutions.

iii.   Develop overarching policies and guidelines for AI in education and training for specific institutions, and agencies under the Ministry are developed;

iv.   Develop capacity of policy makers, education officers and administrators on the AI-related issues in education and training

v.   Ensure that the development, implementation, and evaluation of AI initiatives in education are aligned with broader educational goals and values;

vi.   Guide ethical considerations related to AI in education and training, such as privacy, fairness, transparency, and accountability;

vii.   Ensure that all AI applications in education and training comply with national legal frameworks and ethical standards;

viii.   Encourage the integration of innovative AI technologies in the education and training sector.

3.2 Ministry Responsible for Regional Administration and Local Government Authorities

The Ministry responsible for regional administration and local government authorities shall:

i.   Coordinate efforts between various educational stakeholders to promote the ethical use of AI in schools;

ii. Allocate funding to support AI implementation in schools;

iii. Ensure that all AI tools and applications in schools comply with national legal frameworks and ethical standards;

iv. Review proposed AI projects in schools and assess their potential ethical implications;

v.   Ensure effective integration of innovative AI technologies in teaching and learning.

3.3 Ministry Responsible for Information, Communication, and Information Technology

The Ministry responsible for information, communication, and information technology shall:

i.   Facilitate access of information and communication technologies across diverse and remote areas, including those in rural and underserved areas;

ii. Offer technical assistance and resources to educational institutions for the effective implementation of AI tools.

3.4 Regulatory and Compliance Institutions

Regulatory and Compliance Institutions, namely, TCU, NACTVET, and SQA shall:

i.   Ensure the use and application of AI tools and applications in education comply with relevant national and international laws, regulations, and standards; and

ii. Conduct continuous audits, investigations, and enforcement actions to address non-compliance and mitigation risks associated with AI implementation in education and training.

3.5 Research and Innovation Institutions

Research and Innovation Institutions shall:

i. Conduct cutting-edge research in AI technologies to develop innovative solutions for educational challenges;

ii. Adhere to ethical guidelines in AI research, ensuring transparency, fairness, and respect for privacy;

iii. Establish ethical review boards to oversee AI research projects and address potential ethical concerns;

iv. Innovate and develop AI-driven educational tools and platforms that support teaching and learning;

v. Collaborate with schools and HLIs to implement and evaluate the effectiveness of AI- driven solutions;

vi. Encourage responsible innovation in AI, ensuring that new technologies are developed with consideration for their social and ethical implications;

vii. Facilitate and conduct AI knowledge sharing and dissemination;

viii. Promote collaborations between academia, industry, government, and international research bodies to advance the development and adoption of AI technologies in education and training; and

ix. Encourage interdisciplinary research that integrates AI with other fields, such as psychology and sociology, to address the broader impacts of AI on education.

3.6 Academic and Professional Development Institutions under the Ministry responsible for education

Academic and Professional Development institutions under the Ministry including the Tanzania Institute of Education (TIE) shall:

i. Integrate AI tools and applications into educational programs in a meaningful and pedagogically sound manner;

ii. Develop guidelines for incorporating AI tools and applications into curriculum frameworks;

iii. Develop and implement institutional policies that align

with national guidelines on the ethical use of AI in education and training;

iv. Invest in robust ICT infrastructure to support AI applications in teaching and learning;

v. Provide ongoing professional development and training for students, educators, administrators, and support staff on AI literacy and ethical considerations;

vi. Establish an ethics committee to oversee the use of AI in education and address any ethical concerns that arise;

vii. Foster collaborations with AI experts, tech companies, and other educational institutions to stay updated on the latest advancements and best practices in AI;

viii. Promote research initiatives focused on the development and application of AI in education and training;

ix. Develop mechanisms for regular evaluation of the effectiveness of AI tools and applications and ethical impact in educational settings.

3.7 Institutions Responsible for Basic Education

Schools shall ensure the following:

i. Effectively integrate AI tools and applications in teaching and learning at age-appropriate levels to enhance educational outcomes.

ii. Foster digital literacy skills among learners, teaching them to critically evaluate information, recognize bias in algorithms, and understand the societal impact of AI technologies.

iii. Encourage learners to engage in AI projects that adhere to ethical guidelines, promoting responsible innovation and application.

iv. Apart from encouraging self-learning, schools shall provide training and professional development opportunities for teachers to enhance their understanding of AI technologies and ethical considerations.

v. Engage parents and the wider community in discussions about AI education and ethical considerations, fostering a supportive and informed environment.

vi. Establish mechanisms for monitoring and evaluating the integration of AI education and adherence to AI guidelines, ensuring continuous improvement and accountability.

3.8 The Tanzania Private Investors in Education

The Tanzania Private Investors in Education and Training shall:

i. Partner with the Government to finance AI-related research and development, fostering innovations and creating relevant solutions for AI applications in education and training;

ii. Collaborate with the Government through PPP to promote and invest in AI technology initiatives within the education and training sector; and

iii. Engage with local communities to raise awareness about the benefits and implications of AI in education and training, ensuring that initiatives are inclusive and widely supported.

3.9 The Mass Media

The Mass Media shall:

i. Ensure dissemination of accurate and comprehensive information to the public regarding the benefits, challenges, and ethical considerations inherent in the integration of AI within educational frameworks;

ii. Promote the awareness surrounding AI initiatives within education, highlighting exemplary case studies and optimal methodologies;

iii. Foster discourse amongst educators, policymakers, and the general populace to encourage constructive dialogue about the influence of AI on the future of education and training;

iv. Furnish thorough analyses and commentary concerning

AI technologies employed in educational contexts to aid stakeholders in comprehending their potential ramifications.

v.   Ensure media coverage is accessible to diverse audiences, including those in rural and underserved areas.
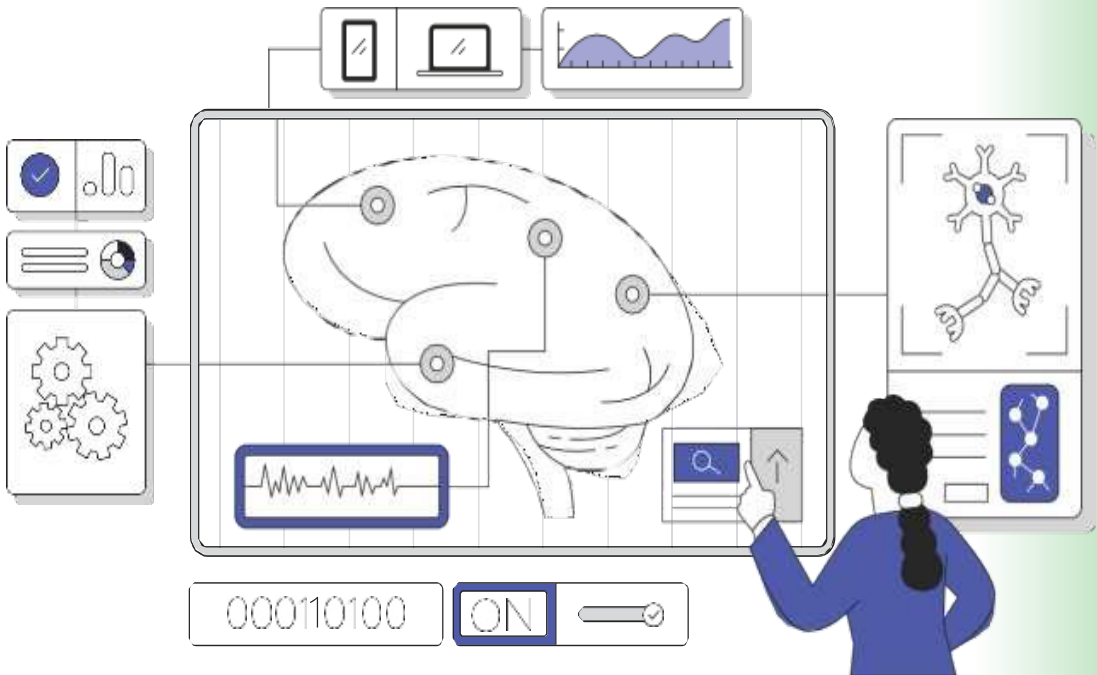
4. MONITORING, EVALUATION AND LEARNING

Effective monitoring, evaluation, learning and continuous improvement are critical to the successful implementation of the Guidelines. A comprehensive list of targets and indicators for monitoring and evaluating the Guidelines is provided in the implementation plan for the National AI Strategy 2024/25 – 2029/30. In view of this, the regulatory bodies responsible for schools, teacher colleges, TVET, and Universities shall:

    i.   Establish a digital monitoring, evaluation and learning system aligned with monitoring and reporting mechanisms to facilitate annual data collection, analysis and reporting to ensure effective implementation of these Guidelines.

    ii.   Operationalize the digital monitoring, evaluation and learning system across all education institutions.

    iii.   Conduct impact assessment on how AI initiatives are impacting learners' learning outcomes, job redness and industry satisfaction.
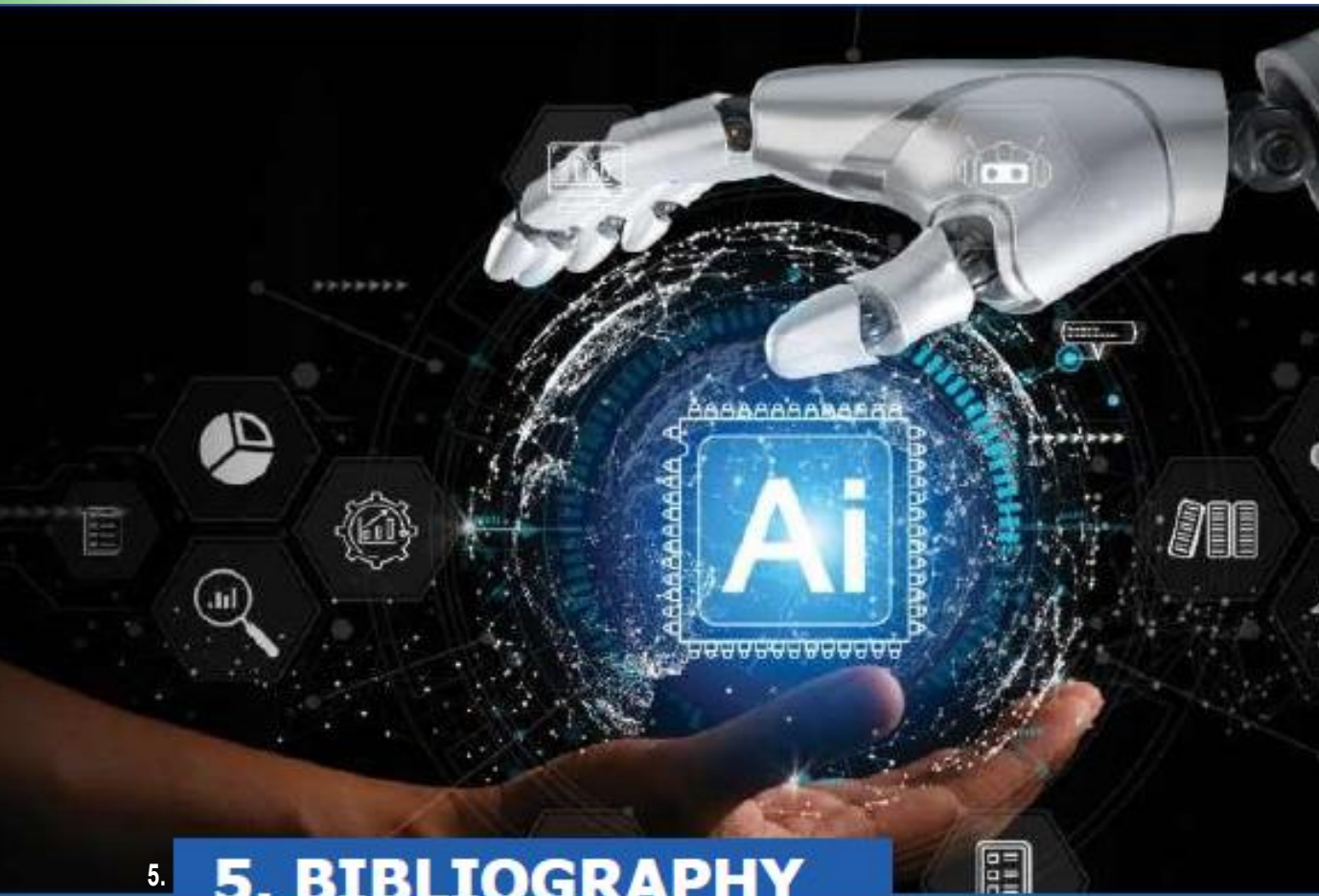
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