



**CONFERENCE PROCEEDINGS ON THE NATIONAL
CONFERENCE ON ARTIFICIAL INTELLIGENCE AND
THE FUTURE OF TVETS IN KENYA-2025**



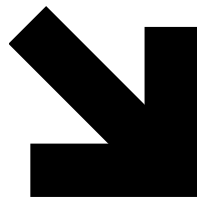
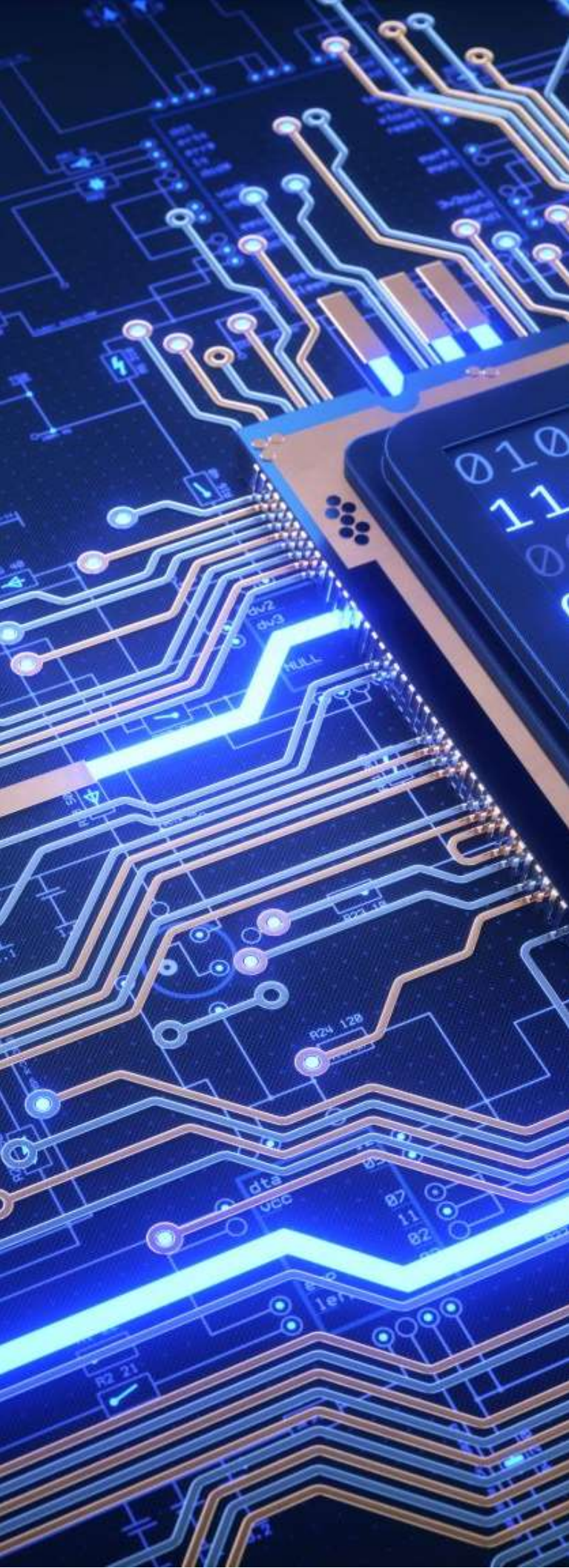


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EXECUTIVE SUMMARY

The Rift Valley Institute of Business Studies (RVIBS), in collaboration with the Kenya National Commission for UNESCO and with support from XE.AI and Africa Tech Space, organized the National Conference Artificial Intelligence and The Future of Vocational Education and Training (TVET) in Kenya. The conference, held under the theme “Exploring the Power of AI in Education, Jobs and Entrepreneurship,” took place on 17th October 2025 at the St. Mary’s Pastoral and Conference Centre in Nakuru City.

The conference affirmed that the adoption of AI within TVET is a critical strategic priority for enhancing national competitiveness, fostering job creation, and ensuring sustainable economic growth. It served as a platform to launch a coordinated national action plan, mandating the modernization of curricula, training infrastructure, and pedagogical methods. This resolution establishes a definitive framework for transforming TVET into a cornerstone of Kenya's digital economy and industrial advancement, ensuring an equitable and prosperous future for all citizens.



1. INTRODUCTION

The National Conference on Artificial Intelligence and the Future of Technical and Vocational Education and Training (TVET) in Kenya was convened to address one of the most pressing issues facing the nation's future workforce. The opening ceremony was presided over by Mr. Stanley Maindi, Director of Recognition of Prior Learning, who represented Dr. Esther Muoria, the Principal Secretary of the State Department for TVET. The conference featured insightful deliberations from a distinguished panel of experts, including Dr. James Njogu, Ag. SG/CEO of the Kenya National Commission for UNESCO; Mr. John Gitau, Director of the Rift Valley Institute of Business Studies; Prof. Chris Odindo from DeMontfort University; Prof. Julius Gatune from Maastricht University and UNESCO Chair of Futures; Dr. Daniel Karanja from the State Department for Science, Research and Innovation; Dr. Florence Kamonjo from the University of Kabianga; and Dr. Moses Thiga from Egerton University, among others. Guided by the theme “Reimagining TVETs: AI, Skills, and Kenya’s Future,” the gathering served as a critical platform to translate strategic vision into actionable plans for systemic change.

Throughout the proceedings, a clear and urgent consensus emerged from the diverse expertise present: the integration of AI into TVET is no longer optional but a fundamental necessity for national competitiveness and inclusive growth. The dialogue, enriched by perspectives from policy, academia, and industry, framed this transformation within both global frameworks and local imperatives like Kenya's Vision 2030. Discussions consistently highlighted practical applications in curriculum design, personalized learning, and ethical governance, moving decisively beyond theory. The conference successfully set the stage for a coordinated national journey, identifying the critical need to address tangible realities like infrastructure, educator readiness, and multi-stakeholder collaboration to build a smarter, fairer future for all Kenyans







2.OPENING REMARKS

The opening ceremony of the conference was presided over by Mr. Stanley Maindi, the Director of Recognition of Prior Learning. He delivered the address on behalf of Dr. Esther Muoria, the Principal Secretary of the State Department for TVET.

In his remarks, Mr. Maindi commenced by commending the Rift Valley Institute of Business Studies (RVIBS) for convening the timely conference. He emphasized that the conference aligned directly with the Ministry’s strategic goal of positioning TVET as a driver of industrialization, job creation, and national competitiveness.

He outlined the critical context for the conference, noting that Kenya, with its young population and growing digital economy, is at a defining moment to harness AI for inclusive development. He observed that the rapid transformation of the global world of work, driven by automation and AI, necessitates a TVET system that fosters a collaborative balance between human skills, such as empathy and critical thinking—and intelligent machines.

Mr. Maindi stated that the TVET system is foundational for employability and must evolve to support sustainable development. He highlighted the need for flexible learning pathways, micro-credentials, and robust systems for recognizing prior learning and credit transfer to allow continuous skills updating.

He detailed the government’s commitment under key national frameworks like Vision 2030 and the Bottom-Up Economic Transformation Agenda (BETA) to modernize TVET. This includes updating curricula with emerging technologies, equipping institutions with smart infrastructure, strengthening industry partnerships, and building trainer capacity in AI-assisted methodologies.

Furthermore, he affirmed a commitment to aligning skills development with the digital and green economy through specific AI-driven initiatives. These encompass AI-informed curriculum planning, personalized learning tools, promotion of access and inclusion, real-time labour market alignment using AI and Big Data, and the implementation of transparent digital credentialing systems.

Mr. Maindi he expressed gratitude at the AI innovations emerging from TVET institutions and welcomed the launch of the RVIBS Virtual School and the AI-Powered Career & Skills Portal. He also noted the inspirational plan for nationwide AI Readiness and Innovation Labs scheduled for 2025-2026.



Mr Stanley Maindi, Director of Recognition of Prior Learning giving his opening remarks



He issued a call to action for development partners, industry players, TVET actors, and students to collaborate in making AI a transformative tool for education and employment. While acknowledging challenges such as infrastructure gaps, digital literacy, and ethical risks like algorithmic bias, he advocated for a responsible, human-centric approach guided by international frameworks like UNESCO's Recommendation on the Ethics of AI and the African Union's Continental AI Strategy.

In conclusion, Mr. Maindi framed the conference as the launch of a national journey to define the future of skills and innovation in Kenya, positioning TVET as a key driver of the Fourth Industrial Revolution in Africa. He then officially declared the national conference open.



3. KEYNOTE ADDRESS PROF. CHRIS ONDIDO

Professor Chris Ondido from De Montfort University, United Kingdom, set the tone for the conference with his keynote presentation, “Kenya’s Next Leap TVET and Artificial Intelligence for a Smarter, Fairer Future for Kenyans.” He presented a compelling case for why Kenya’s TVET sector must urgently and fundamentally adapt to the age of Artificial Intelligence.

Prof. Ondido began by challenging the audience to rethink traditional approaches, particularly in business training. He questioned the ongoing relevance of standard business plans in a world where AI can generate logos, marketing strategies, and financial models in moments. This shift, he argued, signals a move towards nurturing business agility over rigid planning.

He brought this concept to life with vivid examples from various trades. He illustrated how AI is revolutionizing fields like fashion design, where it can predict trends, and automotive repair, where it enables predictive maintenance. The message was clear: from cosmetology to construction, AI is not a distant future but a present-day tool that is changing how work is done, and therefore, how it must be taught.

A central part of his talk demystified Generative AI, explaining its power to create entirely new content—from text and images to complex designs. This capability, he stressed, moves AI beyond simple automation and into the realm of a collaborative partner for innovation across healthcare, technology, and the creative industries.

Linking this directly to education, Prof. Ondido warned against the peril of “business as usual.” With students already aware that AI will define their careers, TVET institutions that fail to integrate these technologies risk becoming obsolete. He emphasized the need for personalized learning and curricula optimized by AI to prepare graduates who are not just employed, but indispensable.

Throughout his address, Prof. Ondido anchored the technological discussion in a critical ethical framework. He passionately advocated for an African-centric approach to AI, guided by principles like Ubuntu. His call was for Kenya and Africa to own their data and narratives, ensuring the AI solutions developed are relevant, equitable, and truly serve the continent's people.



Professor Chris Ondido, giving his keynote address

The presentation culminated in a powerful challenge. Prof. Ondido framed the next few years as a decisive window for Kenya to choose between being a mere consumer or a proud producer of AI solutions. For TVETs, this means a total transformation from institutions focused on manual labor to hubs of knowledge and intelligent problem-solving.

In closing, his call to action was unambiguous. Success requires bold, coordinated effort to reshape curricula, retrain trainers, and reorient students towards

the data-driven workplaces of tomorrow. He concluded that embracing AI is not merely a technical upgrade, but a necessary step to secure a fairer, more innovative, and distinctly African future.



4. KEYNOTE ADDRESS PROF. JULIUS GATUNE

Dr. Julius Gatune from Maastricht University, Netherlands delivered a thought-provoking address that urged the audience to look beyond immediate challenges and strategically prepare for the future. His presentation framed the current era as a profound paradigm shift, drawing a parallel to the disorienting sentiment of “Believe what I say, not what you see.” He noted that the awarding of Nobel Prizes to computer scientists signals AI’s central role in reshaping discovery, yet this progress is shadowed by disruption—from fake news to geopolitical strife—demanding that educational institutions fundamentally rethink their models.

Dr. Gatune presented a nuanced view of Africa’s opportunity. While the continent’s lower-cost labor might offer a temporary buffer against automation, evidence suggests this window is closing fast. He pointed to fully automated factories in China as proof of economic viability yet cautioned that AI still grapples with human-like reasoning and common sense, making a balanced approach essential.

The core of his address was a compelling case for foresight as a critical discipline. In a world defined by volatility and complexity, shifting from a VUCA to a BANI reality—traditional forecasting falls short. Foresight, he argued, is what allows us to overcome present biases, question our assumptions, and recognize that our realities are constructed and can therefore be reimaged. It empowers institutions to spot underlying drivers of change, anticipate shocks, and identify pathways to a desirable future.



Professor Julius Gatune during his Keynote address

Using this lens, Dr. Gatune explored key uncertainties facing education: Will AI make students more capable or more dependent? How will regulation and geopolitics shape academic freedom? He then moved beyond questions to outline four concrete scenarios for the future of TVET and higher education:

- The Platform HEI, where learning is modular and delivered by experts via digital platforms.
- The Industry University, with curricula directly co-created and driven by employer needs.
- The UNIVET Model, a tight integration of university and TVET streams, potentially at the cost of broad curiosity.
- The Consortia HEI, where institutions band together in networks to survive financial constraints.

To navigate toward a preferred future, he introduced the Three Horizons Model as a practical tool: understanding what to retain from the present (H1), what innovations are emerging (H2), and what



transformative actions define the long-term goal (H3). This framework supports strategies like micro-credentialing, lifelong learning subscriptions, and seamless integration of education into daily life.

Dr. Gatune concluded with a powerful reflection on human curiosity. In an age of optimization by AI, our defining advantage becomes the courage to question and explore the unknown. The ultimate goal for education, he asserted, is not merely to produce efficient workers, but to cultivate explorers—individuals who can adapt, create, and ethically co-evolve with technology. For TVET, the future hinges on embracing this foresight mindset and having the courage to redefine human potential.



5. KEYNOTE ADDRESS DR. JAMES NJOGU

Dr. James Njogu, Ag SG/CEO Kenya National Commission for UNESCO (KNATCOM) delivered a presentation on ‘Empowering Skills for The Future — UNESCO’s Perspective on Ai, Equity, And Innovation In TVET’. He opened by emphasizing that in an era of rapid technological change and climate action, TVET systems must evolve to remain relevant. He anchored his discussion in UNESCO’s 2022–2029 TVET Strategy, which provides a blueprint built on three core pillars: advancing equity and inclusion, fostering innovation ecosystems, and embedding lifelong learning. The ultimate aim, he noted, is to steer TVET systems to support a smooth transition for learners into both digital and green economies.

A significant portion of Dr. Njogu’s address focused on the practical integration of Artificial Intelligence (AI) as a catalyst for modernizing TVET. He outlined several concrete applications, moving beyond



Dr James Njogu delivering his keynote address

theoretical promise. These include using AI to analyze real-time labor market data—like online job postings—to forecast skill demands and keep curricula dynamically aligned with industry needs. He also highlighted AI’s role in creating personalized learning experiences through digital learner profiles and in revolutionizing career services with data-driven counseling and intelligent job-matching platforms. However, he stressed that this technological shift must be underpinned by a commitment to digital equity, ensuring universal access to devices, connectivity, and coherent policy

frameworks so that the benefits of innovation are widely shared.

Dr. Njogu further elaborated on the essential skills for the future, arguing that TVET must cultivate a dual focus: hard skills in areas like coding, data analytics, and green technologies, alongside foundational soft skills such as critical thinking and adaptability. He posited that TVET institutions should transform into vibrant innovation hubs that foster entrepreneurship and directly contribute to local economic development.

Using Kenya as a case study, Dr. Njogu illustrated how national reforms are aligning with this global vision. He pointed to Vision 2030, which positions TVET as a key driver of industrialization, and highlighted specific initiatives like the Ajira Digital Program, which empowers over a million youth annually with digital skills for the online gig economy. He also detailed Kenya’s shift towards Competency-Based Education and Training (CBET), a practical, skills-focused model, and the country’s



proactive steps to integrate AI, aiming to establish itself as a regional hub for skilled labor and innovation. Success stories, such as industry-linked training at the Nyeri National Polytechnic, were cited as tangible examples of this approach in action.

In conclusion, Dr. Njogu called for collaborative action across all sectors. He asserted that achieving a future-ready TVET system requires policymakers to create enabling environments, educators to embrace innovative pedagogies, and industry partners to co-create relevant curricula. He framed the integration of AI not as a replacement for human potential, but as a tool to amplify it. The ultimate goal, he emphasized, is an inclusive transformation that equips every learner with the skills to thrive in a sustainable, technology-driven economy, making TVET reform a fundamental pathway to equitable development in the 21st century.



6. PANEL DISCUSSIONS

The panel discussion on the adoption of Artificial Intelligence (AI) in education and Technical and Vocational Education and Training (TVET) systems was moderated by Dr. Daniel Karanja, a technical expert from the State Department for Science, Research & Innovation. The discussion examined the current state of AI adoption in Kenya's education sector, with a specific focus on TVET institutions, the implications for policy and research, and the challenges and opportunities AI presents. The session featured a diverse and expert panel: Prof. Caroline Omulando (DVC Academic Affairs, Open University of Kenya), Dr. Florence Kamonjo (ODEL Expert, University of Kabianga), Dr. Moses Thiga (ICT Director & AI Expert, Egerton University), Tom Bruno (Product & Business Strategy Lead, Chrome Browser, San Francisco, USA), Patrick Mwai (Head of Technology and Innovations, Rift Valley Institute of Business Studies), and Dr. Patrick Kasyula (Deputy Director of Research and Consultancy, Kenya National Commission for UNESCO).

Dr. Daniel Karanja opened the discussion by emphasizing the transformative potential of AI in enhancing the education and TVET landscape in Kenya. He stressed the importance of adopting AI responsibly and affordably, ensuring that it aligns with Kenya's ambition to build a future-ready workforce. Dr. Karanja also took time to highlight how Kenya's State Department for Science, Research & Innovation (SDSRI) is shaping an enabling environment for the ethical and strategic adoption of AI. He referenced Mandate 8, which requires collaboration with the Ministry of ICT to foster the responsible use of emerging technologies like AI. He also shared details on SDSRI's efforts in strengthening the policy foundation with ongoing work on the STI Policy, the national AI Policy, the Nuclear Science & Technology Policy, and the Kenya Atomic Energy Agency Bill. These efforts are supported by the development of critical infrastructure, including the National Science, Technology & Innovation Observatory and a National Repository, which will guide safe and effective AI deployment, secure data sovereignty, and translate research into socio-economic impact.

Prof. Caroline Omulando shared insights from the Open University of Kenya, underscoring the role AI can play in bridging educational gaps, particularly in remote and underserved regions. She emphasized how AI-powered tools can make education more inclusive, personalized, and accessible to diverse learner needs. However, Prof. Omulando highlighted challenges related to equitable access to technology and the need for substantial investments in infrastructure and digital skills development.

Dr. Florence Kamonjo focused on the role of Open, Distance, and eLearning (ODEL) platforms in enhancing AI adoption. She discussed how AI can improve learning experiences by personalizing learning paths and providing data-driven insights to increase student engagement. She also called for continuous training and capacity-building for instructors to fully leverage AI tools and ensure that curricula evolve to integrate emerging technologies effectively.



Dr. Moses Thiga discussed the need for building the competencies of educators and researchers to ensure AI adoption brings meaningful benefits to the education sector. He noted that the application of AI in TVETs is still in its early stages and emphasized the importance of creating AI-aware educators who can use AI to enhance hands-on training, simulations, and diagnostics, particularly in fields like agriculture, engineering, and health.

Tom Bruno offered an international perspective on AI adoption, drawing from his experience at Chrome Browser. He emphasized the importance of AI in transforming industries and education, urging governments, organizations, and educational institutions to invest in capacity-building and infrastructure to safely and effectively adopt AI technologies. He stressed that only through such investments will Kenya be able to realize the full potential of AI in education and training.

Mr Patrick Mwai shared how Rift Valley Institute of Business Studies (RVIBS) is using AI to bridge educational access. He described the AI-powered Virtual School, which allows learners to access high-quality education remotely, and the AI-powered Career Portal, which provides personalized career guidance to students based on their interests and aptitudes. Patrick emphasized that AI, when adopted strategically, can unlock significant opportunities for both educators and students by providing more tailored learning experiences.

Dr. Patrick Kasyula, the Deputy Director of Research and Consultancy at the Kenya National Commission for UNESCO, advocated for the ethical and humanistic adoption of AI in education. He emphasized the importance of ensuring that AI technologies are used in ways that promote inclusivity, fairness, and social responsibility. Dr. Kasyula called for a robust ethical framework to guide AI adoption and ensure that its benefits are accessible to all learners, particularly those in vulnerable or underserved communities.

The panelists discussed the implications of AI adoption, particularly in terms of ethical considerations, data privacy, and the potential impact on employment within educational institutions. They agreed that while AI presents significant opportunities to improve the efficiency and accessibility of education, it also raises concerns regarding the potential for algorithmic bias, privacy violations, and job displacement among educators. Ethical AI deployment, transparency, and the protection of students' data were key topics throughout the discussion.

The panel concluded by addressing the research gaps in AI adoption within the education sector. They highlighted the need for more research on the specific challenges faced by TVET institutions in integrating AI, particularly with respect to infrastructure, capacity building, and curriculum updates. The panelists also stressed the importance of interdisciplinary research to better understand AI's impact on student outcomes and the long-term effects of AI integration on teaching practices and job markets.



Panel Discussions

The panel discussion concluded with a call to action for more collaboration between government agencies, educational institutions, and the private sector to ensure that AI adoption in education and TVETs is responsible, ethical, and effective. While AI presents a transformative opportunity for Kenya’s education system, it requires careful planning, investment, and policy support to ensure that it benefits all learners, prepares them for the future of work, and contributes to the growth of the digital economy.

The panel highlighted that while Kenya has made significant strides in AI adoption, particularly in education, the journey is far from complete. With strategic investments in capacity building, infrastructure, and policy development, Kenya can fully harness the potential of AI to revolutionize its education sector.



CONFERENCE HIGHLIGHTS

