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Education in the 21st Century: Open Universities – Breaking Constraints of the Iron Triangle

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Abstract
The history of Open Universities (OUs) is informative and instructive on how the Iron Triangle can be used to sustainably achieve massive quality and affordable HE in contextual, relevant, innovative, and scientific ways. This presentation intends to interrogate the challenge of balancing access, cost, and quality in OUs. The Iron Triangle has been used by my university, the Zimbabwe Open University (ZOU), to successfully implement the Iron Triangle on reforms in HE. However, OUs, since their inception and proliferation in the last quarter of a century, have ridden on the objectives of openness suggested by Lord Geoffrey Crowther, the inaugural chancellor of the UK Open University in 1969. ZOU benchmarked UKOU on openness and has engaged in innovative systemic reforms, quality frameworks, and cutting-edge technologies to navigate its complex nexuses, such as risk-based quality management systems, digital infrastructures, and open educational resources (OERs) to systematically and contextually break the constraints posed against the Iron Triangle of HE. The perspective of the future of OUs in Africa, therefore, should be ambitious on innovation, qualifications frameworks, technological drivers like GenAI and EdTech in advancing regional integrations and partnerships. OUs have a duty of advancing inclusive and high-quality education in line with SDG 4 and Africa's developmental aspirations; hence, they must reaffirm their strategic relevance in the global education ecosystem by interacting with aspects of openness, GenAI, AdTech, and any new forms of relevant technologies for the education of this and future generations.

Introduction

This paper was read on 22nd October 2025 at the University of Swaziland as a keynote speech at the 59th SERA-DEASA Conference held on the 21st-23rd October 2025, under the theme: *Education in the 21st Century: Access, Affordability, Sustainability, Innovation and Relevance.* I was privileged and honoured to speak to a gathering of visionary leaders and scholars committed to advancing higher education (HE) across Africa and beyond. I am grateful for the motivation I received from the participants, as well as the insights that were shared in this collective pursuit. The speech focused on the Iron Triangle for HE (i.e., Access, Cost, and Quality). We also discussed questions of affordability, sustainability, innovation, and relevance. The thesis of this paper is therefore that, when a delicate nexus of the tree pillars is achieved, questions of affordability, innovation, relevance, and sustainability will naturally fall in place.

In this paper, I am therefore going to discuss the history of the open university system, the principles that inaugurated it, the legacy and development of open universities, their challenges and opportunities, as well as the experiences of the Zimbabwe Open University in the trajectory of the Iron Triangle. This ultimately leads us to reimagine the boundaries of open universities in the twentieth century.

The Historical Trajectory of the Open University System

The history of Open Universities (OUs) began with the University of London (UL)'s 1868 undergraduate degree offers to many countries around the world (Tait, 2025:9). These offers followed Britons and their families in the colonies as well as indigenous peoples there. They used correspondence teaching, evening classes, weekend schools, and supportive tutoring. Also, in Apartheid South Africa, the University of South Africa (UNISA) began offering distance education to all races in 1946 (Tait, 2025:9). While UL supported the Empire and colonialism and UNISA Apartheid, they both set a stage for future HE leaders to later introduce the phenomenon of open education (Sakkoula & Lionarakis, 2024).

The planning of the Open University (OU) in the 1960s, which later became the UK Open University (UKOU) was a distinct concept (Daniel, 2025:3). UKOU was established by the British government in 1969 and opened its doors to the first cohort of 25,000 students, expanding opportunity, obligation, and entitlement to working adults with limited access to conventional universities. In 1969, the very week humans first walked on the moon, Lord Geoffrey Crowther, UKOU's inaugural chancellor, gave his inaugural speech, encouraging ambitious thinking in his four objectives: "open as to people, open as to places, open as to methods and open as to ideas" (Crowther, 1969:1-2). Crowther (1969) further mentioned that "The Open University is not the rival of the existing universities. It is designed to take over where they are compelled to leave off". The implication is that there were inherent contestations on the market, although the clientele targeted differed, a phenomenon that has given OUs entitlement towards working adults in the last 50 years of their operation since the inauguration of the UKOU (Tait, 2018:13).

Following the success of UKOU, the OU model gained international traction; Australia, Canada, and India established their own OUs in the 1980s and 1990s, adapting the model to local needs. Australia's Open University (later renamed OU Australia) expanded access to higher education for remote and rural populations. Similarly, India's Indira Gandhi National Open University (IGNOU), founded in 1985, became one of the world's largest, serving millions with a diverse array of programs.

In Africa, OUs were also formed by state governments, with the earliest in 1992, OU Tanzania, while the National OU of Nigeria operated earlier (1976), in a different mode, but became an OU in 2002. In Africa, besides UNISA, OUs were established in the late 1990s to the early 2000s, quickly embracing the use of technology, especially the internet. They quickly shifted from correspondence-based education to online learning environments, allowing the use of interactive content, real-time communication, and global reach. Many OUs around the world have benchmarked (taken standards) from the UKOU on integration of digital courses, virtual tutorials, and multimedia resources. In 2025, an OU is an integral part of the HE system with over 78 institutions around the world (Bozkurt, et al. 2025:22). Their use of technology was accelerated by the COVID-19 pandemic, influencing conventional universities to gravitate towards open education in one way or the other.

This journey can be understood through three interconnected dimensions: *the foundational principles that inaugurated the OU idea, the legacy and developmental phases that exemplify their growth, and their transformative role across Africa,* as will be presented below.

The Principles That Inaugurated the Open University

It needs to be appreciated that openness is a concept that drove the inception of the OU. It referred to the reduction of "barriers in HE such as accessibility, affordability, equity, and flexibility" (Bozkurt, et al. 2025:21), as will be shown below.

Openness to People: The first principle by Lord Geoffrey Crowther emphasised removing barriers to entry, such as academic prerequisites, age, gender, and socioeconomic status (Moore, 1972:87 cf. Lee, 2021; Peters, 2010). Using a biblical analogy of Jesus with Lazarus' sisters to expound openness to people, Daniel (2025) elaborates, saying:

One regards the individual human mind as a vessel, into which is to be poured as much as it will hold of the knowledge and experience by which human society lives and moves. This is a Martha of education, and we shall have plenty of these tasks to perform. But Mary regards the human mind as a fire that must be set alight and blown with the divine afflatus (p. 4).

Crowther's assertion encapsulated the idea of expanding educational opportunity to those previously marginalized, including working adults, women, and disadvantaged communities.

Openness to Places: The second principle underscored geographical accessibility, leveraging broadcast technologies, radio, television, and later, the internet, to reach learners in remote and underserved areas. The rise of open learning overcame place-related barriers in direct response to equity calls. Use of interactive technology gives locals access to international initiatives and vice versa (Tait, 2018:17,18).

Openness to Methods:

The third principle revolved around pedagogical innovation, embracing new communication channels and instructional methods. Crowther envisioned a system where "every new form of human communication will be examined to see how it can be used to raise and broaden the level of human understanding" (Crowther, 1969). This foresight anticipated the transformative impact of technological advancements, from print to digital media. Thus, "Innovation in being open to methods means striking a fine balance between relevant factors to break the iron triangle of access, cost, and quality" (Xiao, 2025:17). OUs, as opposed to DEUs and CBUs, introduced *flexible, learner-centred* approaches, emphasizing *autonomy*, *self-directed,* and *asynchronous* engagement through *digital platforms.* These *innovations* promote *participation, inclusion,* and *critical thinking,* shaping a *collaborative* and *pluralistic* learning environment.

Openness to Ideas:

Finally, the principle of openness to ideas aimed at fostering critical thinking and broad intellectual engagement through "a participatory approach in which stakeholders have a voice and a say" (Kanwar & Balasubramanian, 2014). The OU model was conceived as a platform for lifelong learning, encouraging exploration, innovation, and participation in societal debates. This is "utilising new pedagogies or technologies in courses or programs" leads to "creating new knowledge based on institutional research activities" (Lee, 2021:124). Finally, the principle of openness to ideas aimed at fostering critical thinking and broad intellectual engagement through "a participatory approach in which stakeholders have a voice and a say" (Kanwar & Balasubramanian, 2014). The OU model was conceived as a platform for lifelong learning, encouraging exploration, innovation, and participation in societal debates. This is "utilising new pedagogies or technologies in courses or programs" leads to "creating new knowledge based on institutional research activities" (Lee, 2021:124). Openness here refers to a participatory approach where stakeholders have a voice in shaping learning experiences, fostering critical thinking and broad engagement. This unprecedented openness encourages

exploration, innovation, and the co-creation of knowledge through new pedagogies and technologies, making ideas in higher education highly dynamic and continuously changing. Innovation of ideas may be the most dynamic and ever-changing among all innovations.

UKOU's foundational principles marked a significant discontinuity from contact universities by emphasising inclusivity, accessibility, and lifelong learning over conventional metrics of campus-based instruction and degree-focused education. UKOU pioneered flexible, open-access models that leverage technology to reach diverse learners regardless of geographical or socioeconomic barriers, instead of face-to-face teaching and rigid curricula in traditional (contact) universities. It added digital platforms for remote learning, personalized learning pathways, and community engagement initiatives that foster social justice. UKOU's forward thinking broke away from exclusivity and physical limitations.

The Legacy and Developmental Phases of Open Universities

The evolution of OUs can be understood through distinct developmental phases, each marked by technological innovations, pedagogical shifts, and expanding societal roles.

Phase 1: The Birth of the Open University (1969–1979)

The late 1960s marked the formal inception of the OU movement with the establishment of the UKOU. Its creation was driven by a recognition of the urgent need to democratise HE amidst rising demand and the limited capacity of traditional universities. This phase was characterized by a focus on course production, curriculum deconstruction, and the development of instructional materials that could be delivered remotely. Economies of scale became a central concern; the idea was that expanding access could be achieved by leveraging the cost efficiencies of mass production and broadcast media. The UKOU's pioneering effort demonstrated that OUs could serve large, diverse cohorts without compromising the core values of quality and inclusivity.

Key innovations: Technology-driven distance delivery, mass enrolment strategies, and a focus on lifelong learning. The UKOU became a model of how to harness media and communication technologies to overcome physical and financial barriers.

Legacy: It established the blueprint for subsequent OUs worldwide, emphasizing that openness and massification could be reconciled with academic standards.

Phase 2: The Growth and Consolidation of the Open University System (1980–1989)

Building on the initial successes, the second phase saw a shift towards a more empirical and pedagogically grounded exploration of openness. Learner autonomy, self-directed learning, and resource-based pedagogies gained prominence. The emergence of systems-based analysis of open learning, as articulated by Ruble (1989), emphasized the importance of understanding the complex interactions between learners, resources, and environments. Educational technology advanced, with the integration of computer-assisted instruction and interactive media. The focus expanded from merely expanding access to ensuring quality, relevance, and learner support. This period also saw the development of regional and international collaborations, notably in Africa, where OUs began to adapt models suitable for local contexts.

UKOU partnered (signed MOUs) with the Ministry of Education in Ghana (virtual labs for high school students), University of Ghana, University of the Cape Coast, Kyambogo University in Uganda, Kenyatta University, University of Nairobi, and Zimbabwe Open University. It has also worked on scalable international interventions and development programs across SSA on

Cancer research in Kenya and Tanzania, funded by the Economic and Social Research Council (ESRC); the WHO Health Equity Assessment Tool (HEAT), and Teacher Education in Sub-Saharan Africa (TESSA), among many.

Key innovations: Self-paced learning, learner-centred pedagogies, and the development of robust QA frameworks have been central to institutional innovations. The University of South Africa (UNISA), Africa's oldest and largest open university, pioneered self-paced distance education with extensive materials and a comprehensive QA system, experimenting with hybrid modes, print, radio, TV, and face-to-face tutorials, to meet regional needs (Letseka, Mphahlele & Akintolu, 2025). The Open University of Tanzania (OUT) embraced active, learner-centred approaches through radio, mobile platforms, and community workshops, expanding into online discussions and televised lectures during COVID-19 to enhance hybrid delivery. The National Open University of Nigeria (NOUN) adopted modular, self-paced learning supported by multimedia and regional centres, integrating print and face-to-face methods within a strong QA framework. RETRIDOL in West Africa emphasises locally produced materials, radio/TV broadcasts, and community workshops, with a regional QA system aligned with UNESCO standards to serve remote areas effectively. The Open University of Kenya, still emerging, plans to combine print, radio, TV, mobile learning, and face-to-face tutorials supported by a QA framework aligned with national standards, reflecting a strategic shift towards inclusive hybrid education. Across Africa, these institutions exemplify how self-paced, learner-centred, and hybrid pedagogies, supported by robust QA, are expanding access and maintaining quality amid infrastructural challenges (Sani, 2025; Njagi, 2020).

Legacy: The recognition that OUs could foster independent, lifelong learners and serve as engines for social development.

Phase 3: The Era of Globalization and Technology (1990–1999)
The 1990s marked a new epoch driven by globalization, the rise of the internet, and the proliferation of information and communication technologies (ICTs). OUs increasingly adopted digital platforms, exploring internet-based learning, virtual classrooms, and interactive multimedia.

However, this phase also revealed challenges, digital divides, cultural sensitivities, and resistance to change. Bates (1997) cautioned that "technological determinism" for OUs in developing nations could exacerbate inequalities if not carefully managed. Still, the potential for expanding access beyond national borders and fostering intercultural dialogue became evident.

Key innovations: Web-based learning environments, online assessments, and international partnerships. The concept of open educational resources (OERs) and open courseware began to take shape.

Legacy: The foundation for the current digital ecosystem of open and distance learning, emphasizing that openness must be coupled with strategic policies and infrastructural investments.

Phase 4: Building Sustainable and Flexible Ecosystems (2000–2009)
The early 21st century saw a move towards integrating ICTs into sustainable, scalable educational ecosystems. Mobile learning, e-learning, and blended approaches became

mainstream. The focus shifted to improving retention, student support, and quality assurance (QA) in digital environments.

Addressing the digital divide and infrastructural deficits, especially in developing regions, became critical. Institutions adopted learning analytics, formative assessments, and learner support systems to enhance student success.

Innovations: Ubiquitous learning, personalized learning pathways, and competency-based education. The rise of MOOCs (Massive Open Online Courses) exemplified efforts to democratize education at scale.

Legacy: A recognition that openness requires ongoing innovation, scalability, and responsiveness to learners' diverse needs.

Phase 5: The Rise of Openness (2010 –2019)
The decade marked a significant evolution in open education, driven by widespread adoption of OER, OEP, and MOOCs. These innovations expanded access, promoted inclusivity, and fostered learner-centred approaches, transforming traditional educational paradigms. MOOCs revolutionised learning by accommodating diverse motivations and goals, necessitating scaled, motivated participation while maintaining quality. OER and practices played a crucial role in building equitable, inclusive knowledge societies, enhancing educational standards globally (Ally & Samaka, 2013). Adaptive online technologies, learning analytics, and personalised support systems emerged to improve retention and address dropout challenges. These empirical solutions enabled tailored interventions, supporting diverse learner needs and fostering more effective, flexible learning experiences.

*Innovations***:** AI-powered tutoring, micro-credentials, badge systems, adaptive learning platforms, and open practices.

*Legacy***:** Post-COVID openness emphasizes innovation, resilience, and inclusivity, with institutions reimagining their roles in a rapidly changing educational landscape.

Phase 6: COVID-19: Open Education through the Front Door (2020–2024)
The COVID-19 pandemic acted as a catalyst for a swift and profound transformation in higher education, prompting institutions to embrace remote and online learning at an unprecedented scale. Higher Education Institutions (HEIs) and Open Universities (OUs) demonstrated remarkable resilience and adaptability by rapidly leveraging their technological infrastructure to maintain educational continuity amid global disruptions. This period brought to light existing inequalities, particularly for marginalized groups lacking access to devices and reliable internet. The crisis underscored the critical importance of digital readiness, stakeholder engagement, and inclusive practices. It also accelerated a shift towards innovative pedagogies, data-driven personalization, and the integration of open educational resources (OER), fostering a more flexible, participatory, and sustainable learning ecosystem.

Innovations: AI-powered tutoring, micro-credentials, badge systems, and adaptive learning platforms became mainstream tools, empowering learners with personalized pathways. The adoption of open educational practices (OEP) and OER expanded access and collaboration, making learning more inclusive and participatory.

Legacy: The post-pandemic landscape redefines openness beyond mere access, positioning it as a driver of innovation, resilience, and systemic change. Institutions are reimagining their roles to foster sustainable, inclusive, and digitally literate societies, embedding open practices as central elements of educational transformation and lifelong learning.

Open Universities in Africa: Challenges and Opportunities

Africa's socio-economic landscape presents both challenges and opportunities for OUs. Historically, HE in Africa was heavily influenced by colonial legacies, with access limited to privileged elites. Recognising this, African policymakers and institutions have increasingly embraced ODE to expand opportunities, for example, the OU of Tanzania (1992), Zimbabwe Open University (1999), the National OU of Nigeria (NOUN, 1986/2002), OU of Mauritania (2012), and the OU of Kenya (2023).

Historical Context: The earliest efforts in Africa, such as UNISA (established as an exam centre in 1873 and ODL in 2004), laid the groundwork for mass education. Post-independence, many countries established national OUs—for example, the OU of Tanzania (1992), the National OU of Nigeria (NOUN, 2002), Zambia Open University (ZAOU), and the OU of Kenya (2023). These institutions aimed to address issues of access, affordability, and relevance.

Current Realities: Despite progress, African OUs face infrastructural deficits, digital divides, and financial sustainability challenges. For example, UNISA's student body exceeds 400,000, but a significant proportion depends on government funding and student loans, raising concerns about student debt and long-term viability (Letseka, et al. 2025).

Innovations and Adaptations: OUs in Africa adopted mobile technology, radio, television, and community-based centres to broaden their reach; for example, UNISA used radio broadcasts to deliver lectures in rural areas lacking internet access, while the OU of Tanzania employs SMS platforms to provide course reminders and support to students in remote regions. In Nigeria, NOUN broadcasts televised lectures nationwide and uses SMS messages to update students on assignments and exams. Additionally, the University of Ghana's Distance Education Division relies on radio tutorials in local languages and community learning centres to engage learners in underserved communities. These innovative pedagogies are tailored to local contexts, effectively breaking barriers and enhancing access.

Strategic Significance: As nations seek to address youth unemployment and skills gaps, OUs are positioned as vital instruments for economic development, social inclusion, and lifelong learning.

Case Studies: UNISA's long-standing history exemplifies the potential of OUs in Africa. The recent establishment of OU Kenya (2023), Botswana Open University (2017), OU Mauritania (2014), NOUN (2002), and UNISA (2004) signals a renewed commitment to inclusive HE. Other institutions, like the Regional Training and Research Institute for Distance and Open Learning (RETRIDOL) in West Africa, exemplify regional cooperation.

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Challenges Facing Open Universities (OUs)

OUs confront a range of complex challenges that threaten their sustainability and relevance. Internally, they grapple with limited capacity for course development, often due to technological and infrastructure constraints, as well as digital infrastructure deficits that hamper effective delivery. Additionally, concerns surrounding QA are critical, impacting student satisfaction and institutional legitimacy. These internal limitations hinder their ability to

innovate, expand their offerings, and adapt to evolving educational demands, posing significant barriers to their long-term growth and relevance.

Externally, OUs face intensified competition from numerous for-profit entities and alternative educational providers, which are rapidly eroding their historically protected space in higher education. This competition has contributed to declines in student enrolment for some institutions, prompting serious questions about their financial models and long-term viability (Lee, 2019). Moreover, broader systemic pressures, such as government austerity measures and the lack of parity with traditional campus-based universities, compound their challenges (Tait, 2018; Lim, 2023).

Traditional, non-profit universities and public institutions historically protected their space in higher education through government funding, accreditation, and established academic standards. These entities are often referred to as public or non-profit universities, distinguished from for-profit and private providers. Examples include state universities like the University of California system and non-profit private universities such as Harvard University. In contrast, for-profit institutions (for example, University of Phoenix) and open universities (for example, Open University in the UK) operate under different models, often emphasizing accessibility and flexible learning.

OUs also must critically examine their openness and inclusivity, particularly concerning disadvantaged and underserved communities, with attention to ethnic and gender disparities (Woodley, 2010). Some contact universities have also begun to dominate the referential roles of OUs, overshadowing their efforts and contributions (Prinsloo, 2017; Teixeira et al., 2019).

A significant obstacle within OUs is what Crowther terms the “founding father syndrome". OUs, like CBUs, have developed an institutional attitude that is anchored in their earlier models without adapting and innovating. This emotional and intellectual reluctance leads to poor recruitment and high dropout rates, emotionally and intellectually, to reconsider traditional paradigms and explore new avenues for development and communication (Tait, 2018).

Collectively, these internal and external challenges underscore the need for OUs to evolve strategically, fostering resilience and embracing change to continue fulfilling their mission of inclusive and accessible higher education.

ZOU and the Successful Implementation of the Iron Triangle

The Zimbabwe Open University (ZOU) exemplifies how an open university can effectively navigate and transcend the traditional constraints of the Iron Triangle, access, Cost (affordability), and quality, by embracing systemic innovation and contextual adaptation. Since its establishment in 1999, ZOU has adopted a pragmatic yet ambitious approach to higher education, grounded in the principles of openness as articulated by Lord Geoffrey Crowther, the UKOU’s first Chancellor: “open as to people, open as to places, open as to methods and open as to ideas” (Crowther, 1969:1-2). This ethos has served as a guiding framework for ZOU’s strategic reforms aimed at democratizing higher education in Zimbabwe and beyond.

ZOU currently uses two strategies: community engagement and formal accreditation with the Zimbabwe National Qualifications Framework (ZNQF), although Massive Open Online Courses (MOOCs) and micro-credentials are still at policy levels. This exemplifies how ZOU operationalised its commitment to opening access without compromising quality. MOOCs will serve as scalable platforms that reach vast and diverse learner populations, including those in

remote and marginalized communities, thus broadening participation while maintaining pedagogical standards. Micro-credentialing allows learners to acquire targeted skills in a flexible, modular manner, fostering lifelong learning and enhancing employability—aligned with regional and national standards (Moore & Kearsley, 2012).

At the ZOU, we are proud to lead in innovative educational practices that enhance our students' learning experiences. Our library plays a central role in managing access to Labster simulation databases—immersive, interactive virtual labs that boost engagement, academic performance, and STEM skills. These virtual labs allow students to learn from mistakes in a safe environment and access experiments that are often impossible in physical labs. This not only enriches learning but also helps the university save space and reduce costs on materials, while providing exposure to world-class scenarios.

Our commitment to QA is evident through our adherence to international standards like ISO 9001 and regional frameworks such as the SADC Qualifications Framework. The ZOU librarian now leads a team working on university ranking systems as part of our QA efforts, ensuring our offerings are credible, portable, and aligned with employment demands (Ministry of Higher and Tertiary Education, 2015).

Furthermore, our QA system is risk-based, incorporating innovations like off-campus access to our digital library to counter infrastructural challenges such as power outages and limited internet. We've also introduced QR codes to provide seamless, offline access to library services.

On solarisation, ZOU has tried to address significant challenges due to unreliable and costly grid electricity in Zimbabwe by installing solar-power systems at Masvingo, Mashonaland West, and Harare Regional Campuses, ensuring continuous access to digital tools and reducing monthly electricity costs. Solar power has provided stable electricity for computers, projectors, and lighting, enabling uninterrupted teaching, even during power outages, and extending learning hours into the evenings. This reliable energy supports digital infrastructure like servers, WiFi, and cooling systems, crucial for online education. It also offers practical learning opportunities, exposing students to renewable energy concepts and fostering innovation and problem-solving skills. However, initial installation costs and ongoing maintenance pose challenges to solarization efforts. Despite these hurdles, solar power enhances teaching and learning sustainability by ensuring consistent access to technology and reducing operational costs. The experiences in Chinhoi, Masvingo, and Harare highlight the importance of renewable energy in resource-constrained settings, demonstrating that solar systems are vital for improving digital infrastructure, promoting access, and ensuring the resilience of online education in Zimbabwe.

In addition, ZOU's regional engagement through partnerships with other African institutions and regional bodies fosters alignment and mobility, reinforcing its strategic relevance within the broader African educational ecosystem. Its policies and programmes are designed to advance inclusive and high-quality education in line with SDG 4, emphasizing that openness should be accompanied by rigorous quality controls and contextual relevance (Vieira do Nascimento, et al., 2020). The university's focus on innovation, regional standards, and technological advancements demonstrates a conscious effort to break the traditional confines of the Iron Triangle, making higher education more accessible, affordable, and of high quality simultaneously.

Finally, ZOU has had a challenge with student debt, and in consultation with student leadership, has reduced fees to promote access and affordability. On quality, the ZOU has also moved away from the module system to the Study Guide approach, to address the question of quality. Among others, ZOU has made a re-curricularisation of Heritage-based Education 5.0 to address the question of relevance. In all, ZOU's experience underscores that the successful implementation of the Iron Triangle in OUs is achievable through systemic reforms, contextualization, and strategic partnerships. Its journey illustrates that openness, when managed within a robust QA framework and supported by innovative technologies, can fundamentally transform higher education landscapes, especially in resource-limited settings. As the future of African OUs unfolds, ZOU's model provides a compelling blueprint for balancing the imperatives of access, affordability, and quality while fostering regional integration and innovation

The Future of OUs: Reimagining Boundaries and the Iron Triangle

Looking ahead, the future of OUs lies in their capacity to innovate, adapt, and expand their strategic relevance. They must continue to break the boundaries of access, cost, and quality by harnessing emerging technologies and pedagogies.

Reimagining Access

Openness must extend beyond traditional boundaries. The integration of AI, virtual and augmented reality, and blockchain-based credentials can be a pipedream, but it can facilitate personalised pathways, facilitate credit transfer, and enable lifelong learning soon. Micro-credentials and badges will serve as flexible, stackable qualifications, making education more modular, portable, and responsive to societal needs.

As Anderson and Simpson (2012) argued, "some OUs appear to be struggling at a time when the wider HE systems are beginning to copy their missions," but true innovation involves going beyond replication. Embracing open data, fostering global networks, and creating regional hubs will expand access further.

In the African context, significant challenges hinder the implementation of these initiatives. Data costs, unreliable or unavailable internet, and limited power infrastructure obstruct connectivity and access. Additionally, high licensing fees and expensive technology further restrict participation. Despite these barriers, opportunities exist through alternative local resources (i.e., low-cost, offline-capable solutions, mobile technology adoption, and regional collaborations tailored to local realities).

Quo vadis African OUs?

African OUs must focus on context-specific strategies, such as leveraging mobile platforms, developing offline content, encouraging open-source tools, and strengthening regional partnerships, to overcome infrastructural barriers and expand access effectively.

Ensuring Quality and Sustainability

QA must evolve in tandem with technological advancements. The deployment of learning analytics, AI-driven assessments, and adaptive learning systems will allow OUs to monitor student engagement, predict dropout risks, and tailor interventions. The challenge is to uphold academic standards while maintaining affordability. Financial sustainability remains critical. OUs must diversify income streams—through partnerships, online micro-credentials, corporate collaborations, and revenue-generating open content—while preserving their social mission.

ZOU has made progress in integrating technology for QA, but balancing academic standards with affordability has not been possible due to staff incapacity, infrastructure constraints, and resource limitations.

Innovative Pedagogies and Technologies

The pedagogical landscape will be revolutionized by immersive technologies, AI tutors, and participatory platforms, enabling a future of "mass personalized education" as envisioned by Daniel (2025). ZOU contributes by leveraging ODeL to expand access, integrate digital tools to support personalised learning pathways, and promote lifelong learning.

OUs like ZOU will increasingly facilitate communities of practice, foster innovation ecosystems, and support local content creation: They will actively integrate indigenous knowledge, multilingual platforms, and culturally relevant curricula to enhance regional relevance and inclusivity.

Fostering Regional and Global Collaborations

The African Virtual University (AVU) functions as a notable collaborator with African OUs by actively engaging in partnerships that enhance access to quality higher education across the continent (AVU, 2022). Since its inception in 1997 as a project of the World Bank and subsequent transition to an autonomous institution in 2003, the AVU has played a role in sharing resources, expertise, and innovative teaching methodologies to support open and distance learning. It works closely with national and regional OUs to develop joint programs, build institutional capacity, and promote the adoption of technology in higher education.

While its influence and level of collaboration vary depending on regional needs and specific partnerships, the AVU's overall contribution includes resource sharing, capacity development, technological support, joint initiatives, and policy engagement. This active involvement makes the AVU a significant partner in strengthening the open university sector across Africa, although critics have questioned its efficacy and the neocolonial aspects of its operations. Nonetheless, the AVU's role as a collaborator is vital in fostering regional educational development and expanding access across the continent.

Policy and Leadership

Policymakers must create enabling environments—investing in broadband infrastructure, establishing quality frameworks, and ensuring equitable funding. Leadership within OUs must be visionary, fostering innovation while safeguarding academic integrity and social justice.

Conclusion

In closing, I reaffirm that OUs are more than just alternative pathways, they are dynamic, transformative institutions that challenge established systems of analysis. Their history, rooted in principles of openness, inclusion, and innovation, demonstrates their capacity to adapt and lead in a complex educational ecosystem. As we confront new technological frontiers, such as artificial intelligence, open educational resources, micro-credentials, EdTech, and others, we must remain anchored in the core ideals that inaugurated the OU movement: openness to people, places, methods, and ideas. Only then can we harness these innovations to achieve truly inclusive, high-quality, and sustainable HE systems. Let us continue to reimagine, innovate, and collaborate, breaking boundaries, expanding horizons, and shaping a future where education is accessible, affordable, and of the highest quality for all.

References

Ally, M. & Samaka, M. (2013). Open Education Resources and Mobile Technology to Narrow the Learning Divide. *International Review of Research in Open and Distributed Learning,* 14(2), 14–27. https://doi.org/10.19173/irrodl.v14i2.1530.

Anderson, B., & Simpson, M. (2012). History and heritage in open, flexible, and distance education. *Journal of Open, Flexible and Distance Learning*, 16(2), 1-10. https://doi.org/10.61468/jofdl.v16i2.56.

AVU (2022). *Extraordinary General Assembly 2021 Report* (Unpublished).

Bates, T. (1997). The impact of technological change on open and distance learning. Distance Education, 18(1), 93-109. https://doi.org/10.1080/0158791970180108.

Bozkurt, A., Loglo, F. S., Cefa, B., Kurşun, E., Bai, J. Y., & Zawacki-Richter, O. (2025). Tracing the Legacy of Open Universities: The Evolution of Openness and the Continuous Transformation of Open Universities. In *Handbook of Open Universities Around the World* (pp. 21-46). Routledge.

Crowther, G. (1969). *Inaugural Speech at the Presentation of the Charter by the Chancellor of the Open University of the United Kingdom*. https://www.open.ac.uk/library/digital-archive/pdf/script/script:5747089b4a53f.

Daniel, J. (2025). Futures of Open Universities. In *Handbook of Open Universities Around the World* (pp. 3-8). Routledge.

Kanwar, A., & Balasubramanian, K. (2014). Open Universities in the Time of MOOCs: Reaching the Unreached? *19th Prof. G. Ram Reddy Memorial Lecture*. Indira Gandhi National Open University (IGNOU), India. https://oasis.col.org/server/api/core/bitstreams/24a4a251-859b-4b19-813c-c26173791a08/content. .

Lee, K. (2019). Rewriting a history of open universities:(Hi) stories of distance teachers. *The International Review of Research in Open and Distributed Learning*, *20*(4), 21-35. https://doi.org/10.19173/irrodl.v20i3.4070.

Lee, K. (2021). Openness and innovation in online higher education: A historical review of the two discourses. *Open Learning: The Journal of Open, Distance and e-Learning*, *36*(2), 112-132. https://doi.org/10.1080/02680513.2020.1713737. .

Letseka, M., Mphahlele, R., & Akintolu, M. (2025). University of South Africa. In *Handbook of Open Universities Around the World* (pp. 105-116). Routledge.

Lim, D. (2023). *The audacity to call a spade a spade: In conversation with Prof Junhong Xiao. Inspired*, 18. https://inspired.oum.edu.my/issues/18/page-8.php.

Ministry of Higher and Tertiary Education (2015). *Ministry of Higher and Tertiary Education (2015). Curriculum frameworks for primary and secondary 2015-2022.* Harare: Government Printers.

Moore, M. G. (1972). Learner autonomy: The second dimension of independent learning. *Convergence*, *5*(2), 76-88.

Moore, M. G., & Kearsley, G. (2012). *Distance Education: A Systems View of Online Learning*. Cengage Learning.

Njagi, R. (2020). *Influence of Teacher Preparedness on Implementation of Competency-Based Curriculum in Public Primary Schools in Kiambu Sub-county, Kiambu County, Kenya* (Doctoral dissertation, University of Nairobi).

Peters, O. (2010). The Transformation of the University into an Institution of Independent Learning. In O. Peters (ed.). *Distance Education in Transition: Developments and Issues* (5th ed.) (pp. 231-242). BIS-Verlag der Carl von Ossietzky Universität Oldenburg.

Prinsloo, P. (2017). What I heard and what I did not hear: Reflections on the World Conference on Online Learning, Toronto, 2017. Distance Education in China, 2, 5-11+79-80. https://soi.10.13541/j.cnki.chinade.20180125.002.

Ruble, G. (1989). 'Open learning', 'distance learning', and the misuse of language. *Open Learning: The Journal of Open, Distance and E-Learning,* 4(2), 28-36. https://doi.org/10.1080/0268051890040206.

Sakkoula, N., & Lionarakis, A. (2024). Tracing the philosophical and theoretical origins of openness in education. *Futurity Philosophy*, *3*(3), 114-130. https://doi.org/10.57125/FP.2024.09.30.07.

Sani, K. (2025). Tertiary Education and Committee System in Nigeria. *Multi-Disciplinary Research and Development Journals International*, *2*(3), 68-81.

Tait, A. (2018). Open universities: The next phase. *Asian Association of Open Universities Journal*, *13*(1), 13-23. https://doi.org/10.1108/AAOUJ-2017-0040.

Tait, A. (2025). Open Universities: An Uncertain Future?. In *Handbook of Open Universities Around the World* (pp. 9-13). Routledge.

Teixeira, A. M., Bates, T., & Mota, J. (2019). What future (s) for distance education universities? Towards an open network-based approach. *Ried-Revista Iberoamericana De Educacion a Distancia*, *22*(1), 107-126. https://doi.org/10.5944/ried.22.1.22288.

Vieira do Nascimento, D., Roser-Chinchilla, J., & Mutize, T. (2020). Towards universal access to higher education: international trends. UNESCO. https://unesdo.unesco.org/ark:/48223/pf0000375686.

Woodley, A. (2010). "Open as to people": the people's response to the Open University of the United Kingdom 1971-2009. *Education et sociétés*, *26*(2), 13-27, https://doi.org/10.3917/es.026.0013.

Xiao, J. (2025). Innovation for Survival: Are the "Four-Open" Principles Still Relevant to Open Universities in the Twenty-First Century?. In *Handbook of Open Universities Around the World* (pp. 14-20). Routledge.