Journal of Pedagogy and Curriculum

[ISSN 2957-6490]
Volume: 04 Issue: 01 | May-2025

JPC

Innovative Assessment in Higher Education: Which Way Forward for Transformative and Sustainable Teacher Education and Training in Modern Africa?

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Cite this article in APA

Zigama,J . C. (2025). Innovative assessment in higher education: Which way forward for transformative and sustainable teacher education and training in modern Africa? *Journal of pedagogy and curriculum, 4*(1), 1-15. https://doi.org/10.51317/jpc.v4i1.698

OPEN ACCESS
A publication of Editon Consortium Publishing (online)

Article history
Received: 12.03.2025
Accepted: 11.04.2025
Published: 12.05.2025

Scan this QR to read the paper online

ABSTRACT

The purpose of this article is to critically examine the limitations of traditional assessment methods in African teacher education and explore emerging innovative strategies that support transformative and sustainable learning. Traditional assessment approaches, primarily exam-based and summative, have been criticised for their inadequacy in addressing the dynamic and competency-based demands of 21st-century teacher education. This review synthesises recent literature, analysing peer-reviewed journal articles, policy documents, and global frameworks on assessment practices in higher education. Through thematic analysis, the article identifies innovative assessment methods such as formative assessment, digital portfolios, peer evaluation, and real-world problem-solving tasks. These approaches emphasise essential competencies including critical thinking, creativity, collaboration, and adaptability - skills necessary for educators in today's diverse and technology-driven classrooms. Additionally, the review highlights the growing role of technology in assessment, particularly AI-assisted tools and e-portfolios, which offer opportunities for personalised learning and timely feedback. However, the review also reveals significant challenges, including digital infrastructure limitations, low digital literacy among faculty, and policy misalignment with emerging practices. The study concludes that to achieve transformative and sustainable teacher education, African higher education institutions must shift from rigid, high-stakes assessments to more flexible, learner-centred, and competency-based models. It recommends institutional reforms, strategic investment in digital infrastructure, and professional development for educators. The significance of this review lies in its potential to inform policy and practice, ensuring that assessment strategies are both contextually relevant and aligned with global standards for equitable and quality education in Africa.

Key terms: Competency-based assessment, innovative assessment, teacher education, transformative learning, sustainable education.

1.0 INTRODUCTION

Higher education in modern Africa is at a pivotal juncture, necessitating a rethinking of assessment strategies to support transformative and sustainable teacher education (Adeyemi & Ubah, 2021). As the continent grapples with the demands of globalisation, digitalisation, and socioeconomic development, the role of educators in shaping competent and future-ready citizens has become increasingly vital. Yet, traditional assessment models - predominantly summative and examination-based - have come under scrutiny for their limited capacity to nurture the critical thinking, creativity, and problem-solving skills that 21st-century teaching demands (Nganga, 2019). These methods often prioritise memorisation over meaningful engagement, hindering the development of reflective and adaptive practitioners.

In contrast, competency-based and student-centred assessment practices are gaining momentum as they align more closely with the goals of modern education (Okebukola, 2020). Innovative strategies such as formative assessments, digital portfolios, peer and self-assessments, and technology-enhanced feedback mechanisms offer holistic and authentic evaluations of learners' abilities. Several African countries have begun implementing these approaches in teacher education. For instance, Kenya's Competency-Based Curriculum (CBC) has introduced performance-based assessments and digital learning portfolios in teacher training colleges to promote reflective practice and learner-centred pedagogy (KICD, 2021). Similarly, Rwanda's Teacher Training and Development Policy supports continuous assessment and the use of ICT tools for real-time feedback in pre-service education programs (MINEDUC, 2020). In South Africa, universities such as the University of Johannesburg have integrated e-portfolios and community-based projects to assess teaching competencies in real-world contexts (Mukeredzi, 2019).

This article adopts a narrative review approach, synthesising and analysing scholarly literature, policy reports, and best practices from 2015 to 2024 to explore innovative assessment methods in teacher education within the African context. The review identifies emerging trends, evaluates their effectiveness, and highlights barriers to implementation, including infrastructural limitations, inadequate faculty preparation, and misaligned educational policies. By drawing on existing evidence, the article proposes actionable recommendations and policy directions to support the integration of innovative assessment strategies, ultimately contributing to a more responsive and equitable teacher education system in Africa (Wanjiru, 2022).

2.0 LITERATURE REVIEW

Innovative Assessment in Teacher Education and the Sustainable Development Goals (SDGs)

The adoption of innovative assessment methods in African teacher education holds immense promise for advancing both national development goals and the global Sustainable Development Goals (SDGs). Chief among these is SDG 4, which aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (United Nations, 2015). Innovative assessments provide a strategic tool for aligning educational practices with this objective by fostering equity, inclusion, and relevance in teaching and learning (UNESCO, 2020).

Firstly, innovative assessment approaches promote deeper learning by shifting the focus from rote memorisation to the development of critical competencies such as creativity, communication, collaboration, and problem-solving (Brookhart, 2013; Darling-Hammond & Adamson, 2014). These skills

are not only essential for effective teaching but also foundational for nurturing learners who can contribute to sustainable development in their communities and countries (Care et al., 2018).

Secondly, technology-enhanced assessment tools, such as AI-assisted grading, mobile-based quizzes, and digital portfolios, increase access and engagement (Luckin et al., 2016; Kizito, 2022). In rural and underserved areas, these tools can be leveraged to provide timely feedback, track learning progress, and support differentiated instruction, thereby contributing to inclusive education. For example, in Rwanda and Ghana, mobile platforms are increasingly used to assess student-teachers in remote teacher training centres, reducing geographical disparities in learning outcomes (MINEDUC, 2020; Tuwor & Sossou, 2021).

Moreover, innovative assessments encourage lifelong learning and professional growth among teachers by embedding reflection, peer feedback, and continuous improvement into the assessment process (Boud & Molloy, 2013; Wanjiru, 2022). This supports not only SDG 4.3 (access to higher education) and SDG 4.4 (relevant skills for employment) but also enhances the overall resilience and adaptability of Africa's education systems (World Bank, 2021).

Finally, by linking assessment to real-world challenges and community engagement, such as through project-based or service-learning evaluations, teacher education programs foster civic responsibility and sustainable thinking - values central to the achievement of SDG 16 (Peace, Justice and Strong Institutions) and SDG 13 (Climate Action) (UNESCO, 2021; Owuor, 2019). Thus, innovative assessment is not just a pedagogical innovation; it is a critical enabler for achieving transformative learning outcomes, closing equity gaps, and empowering educators to drive sustainable development across Africa.

The Need for Innovative Assessment in Teacher Education

Teacher education plays a pivotal role in shaping the future of learning, as educators are responsible for equipping students with the skills necessary to thrive in an increasingly complex world (Ogunniyi & Oni, 2021). However, traditional assessment methods that focus solely on rote memorisation and standardised testing do not adequately measure critical thinking, problem-solving, creativity, or practical teaching abilities (UNESCO, 2021). These conventional approaches often emphasise knowledge recall rather than the application of skills, limiting the capacity of teacher trainees to develop into reflective, innovative, and adaptable educators. As a result, many graduates enter the workforce without the necessary tools to engage diverse learners effectively or address the unique challenges of modern classrooms.

Instead, a competency-based approach (where assessment aligns with real-world skills) ensures that future educators are better prepared for the dynamic classroom environments they will encounter (Amadi & Nwachukwu, 2020). This model emphasises the application of knowledge through hands-on experiences, problem-solving activities, and reflective practices. It encourages teacher trainees to demonstrate their ability to design lesson plans, facilitate discussions, integrate technology, and adapt teaching methods to meet the needs of various learners. By shifting the focus from high-stakes testing to ongoing skill development, competency-based assessment fosters a deeper understanding of pedagogical concepts and promotes lifelong learning.

Innovative assessment methods offer a more holistic way of evaluating teacher trainees, addressing the limitations of traditional exams and fostering a culture of continuous improvement (Jansen & Walters, 2021). These approaches include formative and authentic assessments, digital portfolios, peer and self-assessments, and technology-enhanced evaluation techniques (Mogaji et al., 2022). Formative assessments, such as project-based learning and classroom simulations, provide real-time feedback that helps trainees refine their teaching strategies. Digital portfolios allow educators to document their growth over time, showcasing lesson plans, instructional videos, and reflective journals. Peer and self-assessments encourage collaboration and metacognition, enabling teacher trainees to critically evaluate their strengths and areas for improvement. Additionally, technology-enhanced evaluation techniques, such as AI-driven analytics and interactive online assessments, offer personalised insights into learning progress.

By focusing on continuous feedback, reflection, and adaptability, these innovative methods support deeper learning and long-term professional growth (Chigona, 2019). They empower teacher trainees to develop resilience, creativity, and a student-centred approach to instruction, ultimately leading to higher-quality teaching and improved educational outcomes. As African higher education institutions seek to modernise teacher preparation programs, integrating these advanced assessment strategies will be essential in producing competent, forward-thinking educators who can meet the evolving demands of the 21st-century classroom.

Emerging Innovative Assessment Strategies

Formative and Authentic Assessments

Formative assessments play a vital role in the learning process by providing ongoing, real-time feedback that helps identify strengths and areas for improvement (Black & Wiliam, 2018). Unlike summative assessments, which often serve as a final judgment, formative assessments allow teachers and students to reflect and adjust continuously. Classroom observations, for example, offer direct insights into how well teacher trainees apply instructional techniques and engage with students. Reflective journals encourage trainees to critically analyse their teaching practices and document their learning experiences, fostering self-awareness and professional growth (Gikandi et al., 2011). Real-world teaching simulations allow trainees to step into teaching scenarios where they can practice classroom management, lesson delivery, and student engagement techniques without the stakes of real-life consequences.

Authentic assessments, on the other hand, focus on real-world applications of knowledge and skills (Herrington & Reeves, 2017). These assessments challenge trainees to demonstrate their competence in practical contexts, reflecting the complexities of actual teaching environments. Examples include designing and implementing lesson plans, conducting action research in classrooms, and working on case studies that require analysis of educational challenges. Through these assessments, trainees not only showcase their understanding but also build problem-solving and decision-making skills that are directly transferable to their future teaching roles.

Digital and E-Portfolio Assessment

Digital portfolios have become a powerful tool in modern teacher education, offering a digital space for teacher trainees to compile evidence of their learning journey over time (Barrett, 2020). These portfolios typically include a range of artefacts, such as videos of classroom practice, lesson plans, student feedback,

and reflective writings. By regularly updating these portfolios, trainees can track their professional development and demonstrate their growth to mentors, peers, and future employers.

E-portfolios offer a personalised and competency-based assessment approach by allowing trainees to tailor their portfolios to reflect their individual learning experiences and achievements (Miller & Morgaine, 2021). Unlike traditional assessments, e-portfolios offer a dynamic and interactive approach to evaluation. Trainees can include multimedia elements like videos, audio recordings, and digital projects, enabling a more comprehensive representation of their skills. Additionally, e-portfolios facilitate peer and expert evaluations, fostering a collaborative assessment environment where trainees receive feedback not only from instructors but also from colleagues, which enriches the learning experience (Nguyen, 2019).

Peer and Self-Assessment

Peer and self-assessment techniques are integral in encouraging self-reflection and developing critical thinking skills (Falchikov & Goldfinch, 2000). By assessing their own performance and that of their peers, teacher trainees engage in metacognition, deepening their understanding of the subject matter and refining their teaching practices. Peer assessment promotes collaboration and helps trainees build a supportive learning community where they can share insights, critique each other's work, and collectively improve.

Self-assessment, on the other hand, empowers trainees to take ownership of their professional development (Boud & Molloy, 2013). It encourages them to reflect on their strengths, acknowledge their weaknesses, and set goals for improvement. This process fosters accountability and helps future educators develop the self-regulation skills necessary for lifelong learning. Both peer and self-assessment contribute to creating a learner-centred environment where trainees are not just recipients of feedback but active participants in their own growth.

Technology-Driven Assessment Tools

The integration of advanced technology in assessment is transforming how we measure and support learning outcomes. AI-assisted grading systems, for instance, can reduce the time spent on administrative tasks and provide immediate feedback to students, allowing for more timely interventions (Siemens & Long, 2011). These tools can evaluate open-ended responses, such as essays or lesson plans, and provide both objective scores and qualitative feedback.

Adaptive learning technologies, powered by AI, personalise learning experiences by analysing a trainee's progress and adjusting the difficulty level of content accordingly (Luckin et al., 2016). These systems offer targeted support by identifying gaps in knowledge and suggesting resources or exercises to bridge those gaps, thus providing a tailored learning experience. Technology-driven assessment tools enable more efficient and accurate tracking of learner progress and ensure that assessment aligns with individual learning needs.

Gamification and Interactive Assessments

Gamification is a growing trend in education, integrating game-like elements such as rewards, leaderboards, and challenges into assessments to engage learners (Deterding et al., 2011). These elements

tap into intrinsic motivation, making learning more enjoyable and encouraging learners to strive for mastery. In teacher education, gamified assessments could include challenges that test a trainee's ability to design a lesson plan or manage a classroom scenario, with points or levels awarded for creativity, effectiveness, and student engagement.

Interactive assessments, including virtual reality (VR) and augmented reality (AR) simulations, take gamification a step further by immersing trainees in realistic, simulated environments (Merchant et al., 2014). These immersive experiences allow teacher trainees to practice classroom management, pedagogy, and student interactions in a risk-free, controlled setting. For example, VR simulations might recreate classroom scenarios where trainees can practice handling disruptions or addressing diverse student needs. These innovative approaches allow for experiential learning that traditional assessments cannot replicate, providing a rich, engaging way to evaluate and develop teaching skills.

Project-Based and Collaborative Assessments

Project-based assessments are designed around real-world problems and encourage learners to work collaboratively to find solutions, promoting problem-solving, critical thinking, and innovation (Blumenfeld et al., 1991). In teacher education, project-based assessments might involve creating a comprehensive lesson plan for a diverse classroom, designing educational technology tools, or collaborating on policy proposals to improve educational practices. These projects require trainees to apply their knowledge in practical contexts, often working in interdisciplinary teams to develop multifaceted solutions.

Collaborative assessments allow trainees to work together in solving complex problems, fostering teamwork and communication skills that are vital in the teaching profession (Kolmos et al., 2009). Such assessments integrate elements of education, psychology, and technology, offering trainees a well-rounded understanding of the multifaceted nature of teaching. Collaborative projects encourage knowledge sharing, peer learning, and the development of interpersonal skills, all of which are critical for building effective teaching practices and preparing educators for the demands of modern classrooms.

Innovative Assessment Practices in African Higher Education: Countries' Experiences

In recent years, several African countries have begun to reimagine assessment practices in higher education in response to global calls for quality assurance, relevance, and the development of 21st-century skills. Traditional examinations, often focused on rote memorisation, are being gradually replaced or complemented by innovative assessment strategies that emphasise critical thinking, creativity, collaboration, and real-world problem-solving. Countries such as Kenya, South Africa, Rwanda, Ghana, Nigeria, and Uganda are at the forefront of this transformation, each demonstrating unique approaches aligned with their national development agendas and institutional contexts.

Kenya has made significant strides through the adoption of competency-based education (CBE), which has influenced assessment reforms across its education system, including at the tertiary level. Universities such as Kenyatta University and Egerton University have integrated digital learning management systems like Moodle to administer continuous assessments and provide real-time feedback (Kafu & Simiyu, 2020). In teacher education programs, assessments are increasingly designed around competencies and learning outcomes, incorporating tools such as e-portfolios, project-based assignments, and reflective journals

(Ngware et al., 2022). These strategies align with the goal of producing graduates equipped with practical skills and the ability to apply knowledge in diverse contexts.

In South Africa, the transformation of assessment practices is closely tied to broader efforts to decolonise higher education and promote inclusivity. Institutions such as the University of Cape Town and Stellenbosch University have championed the use of authentic assessment methods that reflect real-life challenges and professional environments. Students are assessed through simulations, problem-solving tasks, group projects, and case study analyses (Le Grange, 2021). The integration of digital tools has also enabled more dynamic and interactive forms of formative assessment, allowing instructors to tailor feedback and support to individual student needs (Bosman & Schulze, 2018).

Rwanda has embraced innovative assessment as part of its national strategy to build a knowledge-based economy. The University of Rwanda, in particular, has emphasised formative and continuous assessments that encourage creativity, self-reflection, and collaboration. Peer and self-assessment methods are commonly employed to foster a culture of responsibility and lifelong learning (Twagirimana et al., 2021). Moreover, entrepreneurship education in Rwanda is often evaluated through business plan development and implementation, linking academic learning to community impact (Nsabimana et al., 2020).

Similarly, Ghana has demonstrated a commitment to ethical and student-centred assessment approaches. At Ashesi University, the implementation of an Honour Code reflects a unique innovation in promoting academic integrity (Bamfo & Owusu, 2020). Assessment methods include oral presentations, peer reviews, and collaborative projects that simulate workplace environments. Technology is used not only for assessment delivery but also to uphold standards through plagiarism detection software and secure examination systems (Effah & Hamid, 2017).

In Nigeria, universities such as Covenant University and the University of Ibadan have adopted hybrid models of assessment that blend traditional examinations with reflective essays, online quizzes, and capstone projects. The use of learning analytics and e-assessment platforms allows for the tracking of student progress and the customisation of learning support (Akinyemi & Ofodu, 2021). Some professional programs, particularly in engineering and health sciences, have adopted competency frameworks that ensure students meet specific standards before graduation (Okoye et al., 2019).

Lastly, Uganda has also embraced continuous assessment strategies, particularly at Makerere University. There is a growing emphasis on experiential learning and assessment through community engagement, fieldwork, and practical demonstrations. These assessments not only evaluate academic learning but also measure the application of knowledge in real-world and community-based settings (Ndidde et al., 2020; Muwanga-Zake & Outram, 2022). This aligns with national priorities in sustainable development and civic responsibility.

Overall, these examples illustrate a positive shift toward more holistic, inclusive, and practical approaches to assessment in African higher education. While challenges such as infrastructural limitations, faculty training, and resistance to change persist, the emerging innovations hold great promise for transforming learning outcomes and enhancing the quality and relevance of higher education across the continent.

3.0 RESULTS AND DISCUSSION

Challenges in Implementing Innovative Assessment

Despite its potential benefits, the transition to innovative assessment in African higher education faces several significant challenges that hinder its widespread adoption and effective implementation. These challenges span technological, pedagogical, policy, social, and cultural dimensions and require a coordinated effort to overcome.

1. Digital Infrastructure Deficiencies

A primary challenge in implementing innovative assessments is the lack of robust digital infrastructure in many African institutions. Access to reliable internet connections, digital devices, and e-learning platforms is uneven, particularly in rural areas or economically disadvantaged regions (Wright et al., 2014). For instance, in Nigeria and the Democratic Republic of Congo, internet penetration remains below 50 per cent, making real-time online assessments unfeasible for many students (World Bank, 2021). Without the necessary technological resources, institutions are unable to leverage digital assessment tools such as e-portfolios, AI-assisted grading, or online collaborative platforms that require stable internet access. Additionally, even within institutions with basic digital infrastructure, inconsistent power supply and limited bandwidth can disrupt the reliability and accessibility of technology-driven assessments. Without improvements in digital infrastructure, it will be difficult to ensure that innovative assessment strategies can be effectively scaled and widely adopted. To address digital infrastructure gaps effectively, attention must also be given to human capacity and readiness, particularly among faculty members tasked with implementing these innovations.

2. Faculty Preparedness

Another challenge is the preparedness of faculty to adopt innovative assessment methods. Many educators in African higher education have been trained to use traditional, exam-focused evaluation models, and these methods are deeply ingrained in their teaching practices (O'Donovan et al., 2004). In Kenya and Tanzania, for example, teacher education programs often focus heavily on content mastery and standardised testing, leaving little room for creativity or formative approaches (Muthwii, 2017). Shifting from this conventional approach to more holistic, student-centred assessments such as formative assessments, peer evaluations, and project-based learning requires not only professional development but also a shift in mindset. Faculty members must be equipped with the skills and knowledge to design and implement these new assessments effectively. Furthermore, many educators may lack confidence in their ability to integrate technology into their assessments, which can lead to resistance to change or a lack of enthusiasm for adopting these methods. Extensive training programs and ongoing support are essential to help educators make this transition. However, even when faculty are willing and trained, institutional and national policy frameworks can present rigid obstacles that limit innovation.

3. Policy and Regulatory Barriers

National education policies often present significant barriers to the implementation of innovative assessment strategies. In many African countries, education systems are still heavily reliant on standardised exams as the primary means of evaluating student performance, as these exams are deeply embedded in the regulatory and policy frameworks (Schoenfeld, 2017). For example, in Ethiopia and South Africa, graduation and university entrance are still predominantly determined by national examinations, making it

difficult for universities to adopt alternative forms of assessment (UNESCO, 2020). National exams may be mandated for graduation or accreditation purposes, and teacher preparation programs may be structured to align with these exam-based standards. These rigid policies create an environment where innovative assessments that focus on continuous, competency-based evaluation may be seen as secondary or incompatible with existing systems. Implementing alternative assessment approaches requires systemic reforms in policy and regulation to create space for more flexible, inclusive, and diverse evaluation models. Until such reforms occur, institutions may face significant pushback from both educational authorities and stakeholders who prioritise standardised testing. Yet even in countries with relatively supportive policies, equity issues in access to technology can still limit the effectiveness of innovation.

4. Equity and Access Concerns

The implementation of innovative assessment strategies also raises significant equity concerns, particularly in relation to access to technology. Socioeconomic disparities across Africa often mean that students in wealthier regions or those attending better-funded institutions have access to modern digital tools and resources, while those in poorer areas do not (Selwyn, 2020). For instance, in Uganda and Malawi, rural students often face challenges such as shared mobile devices, lack of digital literacy, and limited electricity, which hinder their ability to participate in online assessments (Kalema & Oladosu, 2018). Access to devices such as laptops or tablets, or stable internet connections necessary for online assessments, is not universally available. This creates a digital divide that could lead to unequal learning opportunities and assessment outcomes, with students from disadvantaged backgrounds at a distinct disadvantage. Additionally, innovative assessments that rely on technology could inadvertently exacerbate existing inequalities in education, particularly if institutions fail to address the digital access gap. There needs to be a focus on equitable access to technology for all students, which may require governments and institutions to invest in infrastructure and support systems to ensure that no student is left behind. Equity-related challenges are further compounded by deeply embedded cultural norms and expectations about what constitutes a valid and credible assessment.

5. Cultural Resistance to Change

Cultural resistance to change is a pervasive challenge that affects the adoption of innovative assessments in African higher education (Fullan, 2007). Many education stakeholders, including policymakers, educators, students, and parents, have strong attachments to traditional methods of assessment, such as high-stakes exams and teacher-centred evaluations. This attachment is often rooted in long-standing cultural values around education and authority, where examinations have historically been viewed as the ultimate measure of success. In countries such as Ghana and Zambia, standardised testing is not only a school practice but a societal expectation, and any deviation may face criticism or distrust from parents and communities (Anamuah-Mensah & Towse, 2019). Transitioning to newer, competency-based, and technology-driven approaches may be seen as risky or untested, leading to reluctance or outright resistance to change. Additionally, there may be concerns about the perceived fairness and validity of non-traditional assessments, particularly when they diverge from widely accepted norms. Overcoming this resistance requires a shift in educational culture, where stakeholders understand the value of more dynamic, inclusive, and reflective assessment models. This shift is likely to take time and will require active engagement, communication, and buy-in from all involved.

4.0 CONCLUSION AND RECOMMENDATION

Conclusion: Reimagining assessment in higher education is not just a necessity but a fundamental step toward building a transformative and sustainable teacher education system in Africa (Maringe & Ojo, 2017). As education systems across the continent evolve, it becomes increasingly clear that the traditional, exam-driven models of assessment no longer suffice in preparing teachers for the complexities of modern classrooms. These methods, while entrenched in educational practices, often fail to capture the nuanced skills that educators need, such as critical thinking, creativity, and the ability to adapt to diverse student needs (Nganga, 2019). By shifting towards innovative assessment techniques, higher education institutions can better equip teachers with the competencies and reflective practices necessary to foster learning environments that nurture student potential.

Moving away from rigid, one-size-fits-all exams and adopting more flexible, competency-based assessments allows for a deeper, more holistic evaluation of teacher readiness. Approaches such as formative assessments, digital portfolios, peer evaluations, and technology-enhanced feedback systems offer real-time insights into teaching practices, enabling teachers to grow continuously throughout their careers (UNESCO, 2021). These strategies not only help assess practical teaching skills but also encourage lifelong learning, which is crucial in a world where educational needs and technologies are rapidly evolving.

However, transitioning to these innovative methods requires a concerted effort across multiple levels. While challenges remain - ranging from infrastructural limitations to resistance within academic institutions - targeted investments in infrastructure, faculty training, and policy reforms can pave the way for meaningful change. Building a solid technological infrastructure, developing teacher training programs that emphasise assessment literacy, and enacting policies that support the integration of innovative assessment methods are essential components of this transformation. Moreover, engaging all stakeholders, including educators, policymakers, and communities, will be crucial to ensuring that new assessment strategies are embraced and implemented effectively.

Ultimately, the successful implementation of transformative assessment approaches will contribute not only to the professional development of teachers but also to the broader goal of educational excellence and sustainable development across the continent (Okebukola, 2020). By fostering a more equitable, inclusive, and competency-based education system, Africa can better address the evolving challenges of the 21st century, producing educators who are equipped to inspire the next generation of learners. In this way, innovative assessment methods will be key to realising the vision of a brighter, more resilient educational future for Africa.

Recommendations for Transformative and Sustainable Teacher Education

In response to the critical challenges hindering the integration of innovative assessment methods in African teacher education - namely, limited digital infrastructure, inadequate faculty preparedness, policy rigidity, equity concerns, and cultural resistance - this section outlines strategic recommendations. These recommendations aim to foster sustainable reform and enhance the relevance and effectiveness of teacher preparation in the 21st century.

1. Strengthen digital infrastructure

To address the widespread technological deficiencies, particularly in rural and underserved regions, substantial investment in digital infrastructure is essential. Governments and higher education institutions must prioritise the provision of stable internet connectivity, access to digital devices, and the development of secure e-learning platforms and assessment tools (Selwyn & Facer, 2013; UNESCO, 2022). These investments form the backbone of any meaningful shift toward technology-enabled assessment. Collaborative efforts - such as public-private partnerships - should also be pursued to optimise the deployment and maintenance of digital resources across institutions (World Bank, 2020).

2. Build faculty capacity for innovative assessment.

Enhancing faculty preparedness is crucial for the successful adoption of new assessment models. Teacher educators require ongoing professional development that equips them with both theoretical understanding and practical skills in modern assessment practices (Gikandi, Morrow, & Davis, 2011; Tondeur et al., 2018). This includes training in competency-based assessment, formative feedback techniques, and the use of digital tools such as e-portfolios, AI-supported grading systems, and learning management platforms. Institutional frameworks should support continuous learning and cultivate a culture of assessment literacy to ensure sustained implementation (OECD, 2018).

3. Promote hybrid assessment models.

Given the entrenched reliance on traditional summative examinations, adopting hybrid assessment models offers a pragmatic pathway toward reform. These models blend conventional assessment forms with more innovative approaches, such as project-based learning, peer assessment, and digital portfolios (Joughin, 2009; Boud & Falchikov, 2007). By balancing familiarity with novelty, hybrid models can facilitate a gradual transition that accommodates diverse learner needs and reduces institutional resistance, ultimately fostering deeper learning and competency development.

4. Reform policies and strengthen institutional support

Meaningful transformation in assessment practices must be underpinned by supportive policy environments. Governments should revise national education policies to legitimise and guide the use of diverse, competency-based, and continuous assessment strategies (Pellegrino & Hilton, 2012; Republic of Kenya, 2019). Simultaneously, institutions must align their internal policies, provide adequate resources, and empower leadership to drive assessment innovation. Clear guidelines and regulatory frameworks will ensure consistency and accountability across higher education systems (Sifuna & Sawamura, 2010).

5. Ensure inclusion and equity in assessment.

Equitable access to innovative assessments must be guaranteed for all learners, regardless of their socioeconomic background. Targeted strategies - including the provision of affordable devices, internet subsidies, and free or low-cost learning platforms - are necessary to bridge the digital divide (OECD, 2018; ITU, 2021). Additionally, assessments should be designed with accessibility in mind to accommodate students with disabilities and those from marginalised communities. Such inclusive measures will safeguard against the reproduction of inequality in technologically mediated education systems (UNESCO, 2020).

6. Engage stakeholders and foster public awareness.

Resistance to change in assessment practices is often rooted in deeply held cultural and institutional norms. Overcoming this barrier requires deliberate efforts to engage stakeholders - policymakers, educators, students, parents, and the public - in meaningful dialogue about the benefits and purposes of innovative assessments (Fullan, 2016). Public awareness campaigns, advocacy platforms, and participatory planning processes can help reshape perceptions and build a shared commitment to student-centred, future-oriented education practices.

7. Foster cross-national collaboration and knowledge sharing

Finally, regional and international collaboration is vital for scaling innovative assessment practices across African higher education. Platforms for cross-border exchange - facilitated by the African Union, regional consortia, or development partners - can enable institutions to share resources, adapt best practices, and co-develop contextually relevant assessment models (World Bank, 2020). These partnerships not only enhance institutional capacity but also foster a continental approach to educational transformation, grounded in solidarity and shared innovation.

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