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E-learning platforms in higher education: A comparative review of the USA and Africa

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Abstract

This comparative review explores the landscape of e-learning platforms in higher education, drawing distinctions between the United States and Africa. As technology continues to transform education globally, understanding the nuanced approaches and challenges faced by these regions becomes paramount. In the United States, a leader in educational technology, e-learning platforms have become integral to higher education institutions. This study examines the diverse platforms utilized, ranging from learning management systems to specialized tools fostering interactive and collaborative learning experiences. The analysis also delves into the role of Massive Open Online Courses (MOOCs) and their impact on access to education.In contrast, the African continent exhibits a varied and evolving e-learning terrain, shaped by economic, infrastructural, and cultural factors. The study reviews how African higher education institutions are adapting to digital transformation, emphasizing the unique challenges faced in the implementation of e-learning platforms. Accessibility, connectivity issues, and the digital divide present formidable hurdles, yet innovative initiatives and partnerships are emerging to address these constraints.A comparative lens is applied to elucidate commonalities and disparities in e-learning adoption between the USA and Africa. Policy frameworks, funding mechanisms, and institutional support for e-learning initiatives are scrutinized, revealing how governmental and organizational strategies influence the trajectory of digital education. The study also considers the role of e-learning in addressing socio-economic disparities, particularly in Africa, where digital education has the potential to bridge gaps and enhance educational inclusivity.The implications of these comparative findings extend beyond the technological realm, touching upon pedagogical shifts, student engagement, and the future of higher education. As the world navigates the complexities of the digital age, this comparative review contributes to a broader understanding of how e-learning platforms are shaping higher education in the USA and Africa, offering insights for policymakers, educators, and stakeholders invested in advancing educational opportunities in an increasingly interconnected world.

Keywords: E-Learning; Platforms; Higher Education; Institution; Technology

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1. Introduction

E-learning, a transformative force in contemporary education, has redefined the landscape of higher learning by leveraging digital technologies to deliver educational content beyond traditional classroom settings. As higher education institutions around the world increasingly embrace e-learning platforms, it becomes imperative to understand how different regions navigate the challenges and opportunities presented by this evolving paradigm.

The adoption and impact of e-learning in higher education have been a subject of interest, particularly in the comparative analysis between the United States and Africa. E-learning, encompassing digital technologies to deliver educational content, has the potential to democratize access, enhance flexibility, and foster interactive and personalized learning experiences (Dhawan, 2020). The significance of e-learning lies in its potential to transcend geographical boundaries, making education accessible to a broader and more diverse audience (Dhawan, 2020). In the context of higher education, e-learning offers students flexibility, access to digital resources, and essential skills in navigating online platforms (Dhawan, 2020). The comparative study between the USA and Africa is essential due to the distinct contexts in terms of economic, technological, and educational landscapes (Dhawan, 2020).

The historical evolution of e-learning in both the USA and Africa, including policy developments and technological advancements, has shaped the current landscape (Dhawan, 2020). The prevalence of Learning Management Systems (LMS), Massive Open Online Courses (MOOCs), and other interactive tools in higher education has been a focus of evaluation (Al-Fraihat et al., 2020). Factors influencing adoption rates and patterns, as well as challenges and opportunities associated with e-learning in the USA and Africa, have been analyzed (Al-Fraihat et al., 2020). The unique challenges related to digital divide, infrastructure limitations, and diverse socio-economic conditions in Africa have been recognized (Venturino & Hsu, 2022). The impact of e-learning on medical students' clinical competency and the acceptance of e-learning during the COVID-19 closure time have been studied (Ibrahim et al., 2021; Enoch et al., 2022).

The quality of online learning platforms and their effect on education, as well as the readiness of faculty members to use e-learning platforms, have been assessed (Alkubaisi et al., 2021; Alotaibi & Alghamdi, 2021). The effectiveness of English learning media through Google Classroom in higher education and the challenges of e-learning initiatives in African universities have been explored (Syakur et al., 2020; Gunga & Ricketts, 2006). The significance of cultural diversity in the development of e-learning systems in South Africa has been acknowledged (Chukwuere et al., 2015). The research results provide valuable insights into the development of online education platforms (Wen et al., 2020).

In conclusion, the comparative review of e-learning platforms in higher education in the USA and Africa has shed light on the diverse trajectories of e-learning adoption and its impact. The multifaceted objectives of the review have provided a comprehensive understanding of e-learning's implications for shaping the future of higher education globally.

Scrutinize the policy frameworks and governmental initiatives supporting or hindering the integration of e-learning in higher education. Evaluate the role of regional organizations, funding mechanisms, and regulatory environments in shaping e-learning policies.Assess the impact of e-learning on access to higher education and the quality of learning experiences in both regions. Explore how digital education contributes to inclusivity, addresses disparities, and enhances the overall educational journey for students.By addressing these objectives, this comparative review aspires to contribute valuable insights to the ongoing discourse on e-learning in higher education, fostering a deeper understanding of the global implications and regional nuances of this transformative educational paradigm.

2. E-Learning Landscape in the USA

The evolution of e-learning in the United States has been a dynamic journey, significantly shaping higher education. This comparative review explores the e-learning landscape in the USA, offering insights into its historical evolution, an overview of prominent e-learning platforms, and the impact of digital education on access and quality of education.The historical evolution of e-learning in the USA can be traced back to the emergence of online education in the late 20th century.

The 1990s marked the beginning of a significant transformation in higher education, as universities started to explore the potential of online courses, utilizing the internet as a means to deliver educational content (Jhurry & Rampersad, 2022). This shift allowed students to access courses remotely and engage with learning materials at their own pace. Subsequently, the late 1990s and early 2000s witnessed the widespread adoption of Learning Management Systems (LMS) in U.S. higher education, such as Blackboard and Moodle, which became integral for course management and

interaction between instructors and students in the digital realm (Cavanaugh et al., 2009). This adoption of LMS platforms represented a milestone in providing a centralized platform for managing educational content, assessments, and communication tools (Cavanaugh et al., 2009).

As technology advanced, there was a considerable expansion of online degree programs in the USA, enabling students to pursue fully online degree programs across various disciplines, thereby democratizing access to higher education (Jhurry & Rampersad, 2022). The early 2010s saw the emergence of Massive Open Online Courses (MOOCs) offered by platforms like Coursera, edX, and Udacity, which attracted a global audience and provided access to high-quality educational content on a massive scale (Jhurry & Rampersad, 2022). Furthermore, the integration of adaptive learning technologies has enhanced the e-learning landscape, using data analytics and artificial intelligence to personalize the learning experience and cater to diverse learning styles (Peng et al., 2019).

Learning Management Systems (LMS) continue to play a central role in U.S. higher education, with platforms like Canvas, Blackboard, and Moodle providing a comprehensive suite of tools for course management, content delivery, collaboration, and assessment, facilitating asynchronous learning (Cavanaugh et al., 2009). The evolution of online education has not only transformed the delivery of educational content but has also contributed to the democratization of education, making higher education more accessible to a broader demographic (Jhurry & Rampersad, 2022).

MOOCs have gained widespread popularity in the USA, offering learners access to courses from top universities and institutions. Platforms like Coursera, edX, and Khan Academy provide a diverse range of courses across disciplines. MOOCs are characterized by their open access, scalability, and often feature interactive elements such as quizzes, discussion forums, and peer assessments.The e-learning landscape in the USA incorporates a variety of interactive and collaborative tools to enhance engagement and communication. Video conferencing platforms like Zoom and Microsoft Teams facilitate virtual classrooms and synchronous interactions. Collaboration tools such as Google Workspace and Microsoft 365 enable real-time document sharing, collaborative projects, and group work in the digital space.

E-learning has played a transformative role in expanding access to higher education in the USA. Online degree programs, MOOCs, and asynchronous learning options have made education more accessible to individuals who may face geographical, time, or financial constraints. Working professionals, parents, and those with other commitments benefit from the flexibility of e-learning, enabling them to pursue higher education without disrupting their daily lives.The e-learning landscape fosters diversity and inclusivity by reaching a broader and more varied student demographic. Online education caters to individuals from different backgrounds, geographical locations, and age groups. This inclusivity contributes to a diverse learning environment, where students bring varied perspectives and experiences to the virtual classroom.

E-learning platforms leverage technology to enhance the quality of education. Interactive multimedia, simulations, virtual labs, and adaptive learning technologies contribute to a richer learning experience. Students have access to a wealth of digital resources, enabling them to engage with content in diverse formats and participate in interactive learning activities that enhance understanding and retention.E-learning platforms facilitate the creation of global learning communities. Students from different parts of the world can collaborate, share insights, and engage in cross-cultural discussions. This global interconnectedness broadens perspectives and

3. E-Learning Landscape in Africa

As e-learning platforms continue to reshape higher education globally, the African continent faces unique challenges and opportunities in adopting digital education. This comparative review explores the e-learning landscape in Africa, contrasting it with the experiences in the United States. The analysis covers challenges and opportunities, the diversity in e-learning adoption across African countries, initiatives addressing digital education constraints, and the role of e-learning in bridging socio-economic disparities in African higher education.Limited access to reliable internet and insufficient technology infrastructure present formidable challenges in adopting e-learning across Africa. Many regions, especially in rural areas, face connectivity gaps and a lack of essential devices. This digital divide hampers the seamless integration of e-learning platforms and exacerbates existing educational disparities.Financial constraints within educational institutions and at the individual student level contribute to the challenges of adopting e-learning in Africa. The costs associated with developing digital infrastructure, creating online content, and providing devices to students can strain institutional budgets and limit access for economically disadvantaged students.

Digital literacy gaps among students and educators pose barriers to effective e-learning adoption. The ability to navigate online platforms, use digital tools, and engage with e-learning resources varies across demographics. Bridging these gaps is essential to ensure that both students and educators can fully participate in digital education.

E-learning platforms have the potential to revolutionize higher education in Africa by offering flexibility and accessibility to a diverse range of students, including working professionals and those in remote areas (Ng'ambi et al., 2016). These platforms enable students to access educational materials from anywhere, accommodating diverse learning styles and schedules (Baig et al., 2021). The integration of multimedia, interactive content, and adaptive learning tools can enhance the quality of education and cater to diverse student needs (Ng'ambi et al., 2016). Furthermore, e-learning facilitates global collaboration and knowledge exchange, enriching the educational experience and preparing students for a globally competitive landscape (Kumi–Yeboah et al., 2023).

The adoption of e-learning platforms in African countries is influenced by technological infrastructure, economic disparities, and educational policies (Ng'ambi et al., 2016). Countries with stronger economies tend to allocate more resources to develop digital infrastructure and implement e-learning initiatives, while economically challenged nations face significant hurdles in overcoming resource constraints (Ng'ambi et al., 2016). Additionally, differences in educational policies and priorities contribute to the diversity in e-learning adoption, with countries that prioritize technology integration in education being more likely to witness widespread adoption.

Collaborative efforts between public entities, private enterprises, and non-profit organizations have emerged as a key strategy to address digital education constraints in Africa, contributing resources, expertise, and funding to implement comprehensive solutions. International aid and philanthropic initiatives also play a vital role in addressing digital education constraints, providing grants and support programs aimed at improving internet connectivity, supplying devices, and fostering digital literacy. Regional collaborations and networks, facilitated by organizations like the African Union, are instrumental in addressing common challenges, allowing countries to share best practices and develop regional strategies for overcoming digital education constraints.

While e-learning platforms offer significant opportunities to enhance flexibility and accessibility in African higher education, addressing the challenges related to technological infrastructure, economic disparities, and educational policies is crucial for widespread adoption and success.

E-learning platforms have the potential to bridge socio-economic disparities by enhancing accessibility for marginalized communities. Students who may face financial barriers or reside in remote areas can access educational resources through online platforms, contributing to democratizing education and creating opportunities for individuals who traditionally face challenges in pursuing higher education (Letseka&Pitsoe, 2018). E-learning offers flexible learning paths that cater to diverse socio-economic backgrounds, allowing individuals to balance education with other commitments, breaking down barriers to access (Meskhi et al., 2019). Furthermore, e-learning equips students with digital skills essential in the modern workforce, contributing to leveling the playing field for individuals from diverse socio-economic backgrounds (Anwar et al., 2020). This digital literacy becomes a valuable asset, empowering students to navigate the digital landscape effectively ("Online Learning Platforms' Induced Education Inequalities and Special Education Students' Learning Attitude during Covid-19 Pandemic Homestay in the University of Ibadan", 2021). Additionally, e-learning facilitates global networking and opportunities, irrespective of socio-economic backgrounds, breaking down geographical barriers and opening doors to a more equitable distribution of educational opportunities (Letseka&Pitsoe, 2018).

In conclusion, the e-learning landscape in Africa presents a dynamic interplay of challenges and opportunities. The continent's diverse economic, technological, and educational contexts contribute to variations in e-learning adoption across countries. Initiatives and partnerships addressing digital education constraints showcase a commitment to overcoming challenges collaboratively. E-learning, with its potential to enhance accessibility, foster innovation, and bridge socio-economic disparities, stands as a transformative force in African higher education, contributing to a more inclusive and globally connected educational landscape.

4. Accessibility and Connectivity

The integration of e-learning platforms in higher education holds immense promise for widening access and fostering educational inclusivity. However, the realization of these benefits is contingent upon addressing challenges related to accessibility and connectivity. This comparative review explores the distinct dynamics of accessibility and connectivity in the United States and Africa, shedding light on infrastructure challenges, comparing accessibility issues, and examining strategies for improvement in both regions.One of the foremost challenges impeding e-learning accessibility in Africa is the limited access to reliable internet.

The digital divide is a pressing issue affecting both the United States and Africa, with rural areas experiencing limited access to high-speed internet and necessary devices for e-learning (Douthit et al., 2015; Hale et al., 2010). This

discrepancy exacerbates educational inequalities, as urban centers often enjoy better connectivity than rural areas (Hale et al., 2010). In Africa, regional disparities in digital infrastructure and economic challenges contribute to varying levels of internet connectivity and technology access (Sumin et al., 2021). To address these challenges, governments and stakeholders in African countries must prioritize investments in digital infrastructure, including expanding broadband networks and ensuring widespread access to reliable connectivity (Sumin et al., 2021). Similarly, in the United States, targeted efforts to expand broadband access in rural and low-income areas are crucial, with public-private partnerships playing a significant role in accelerating broadband expansion (Hale et al., 2010).

Establishing community access centers in underserved areas can provide a practical solution to connectivity challenges, offering internet access, computer facilities, and support services for students (Rosenblatt, 2000). Additionally, offline learning solutions can be implemented to address connectivity challenges, allowing students to access educational materials even without a constant internet connection (Rosenblatt, 2000). Furthermore, ensuring that every student has access to necessary devices is critical, and device accessibility programs supported by governmental and philanthropic efforts can bridge the device ownership gap among diverse student populations (Hale et al., 2010).

Enhancing digital literacy is key to maximizing the benefits of e-learning, and educational institutions and policymakers can implement digital literacy programs to empower students with the skills needed to navigate online platforms effectively (Sumin et al., 2021). Collaborative efforts between public entities, private enterprises, and non-profit organizations are instrumental in addressing infrastructure challenges globally, bringing together diverse resources, expertise, and funding to implement comprehensive solutions that improve internet connectivity and establish digital infrastructure (Sumin et al., 2021). Ongoing research and innovation are also essential, as they can inform policy decisions and help adapt e-learning platforms to the evolving needs of diverse student populations (Sumin et al., 2021; Wang et al., 2016).

Addressing the digital divide requires a multi-faceted approach, including infrastructure development, device accessibility programs, digital literacy initiatives, and collaborative efforts between various stakeholders. By prioritizing investments in digital infrastructure, expanding access to technology, and promoting digital literacy, both the United States and African countries can work towards ensuring equitable access to e-learning platforms.

Implementing flexible learning models that accommodate different connectivity scenarios is crucial. E-learning platforms should be designed to function seamlessly across varying levels of internet connectivity, allowing students to access educational materials regardless of the quality of their internet connection. This flexibility ensures that educational opportunities are not limited by infrastructure constraints.In conclusion, addressing the accessibility and connectivity challenges of e-learning platforms requires a multi-faceted and region-specific approach. In both the USA and Africa, the key lies in strategic investments, collaborative partnerships, and innovative solutions that prioritize equitable access to education. As global initiatives continue to advance, bridging the digital divide becomes not only a technological imperative but a fundamental step towards creating inclusive and accessible higher education for all.

5. Policy Frameworks and Institutional Support

The integration of e-learning platforms into higher education is not only a technological challenge but also a deeply policy-driven endeavor. This comparative review explores the policy frameworks and institutional support for e-learning in higher education, drawing distinctions between the United States and Africa. Examining governmental policies, funding mechanisms, and the role of regional organizations provides a comprehensive understanding of how these regions navigate the complexities of digital education.

The development and implementation of e-learning platforms in higher education in the United States are subject to a combination of federal and state-level regulations. Federal policies, such as the Higher Education Act (HEA) and the Distance Education Demonstration Program, provide a framework for institutions to offer distance education programs and access federal funding. The HEA sets guidelines for accreditation, financial aid, and program eligibility, ensuring a balance between national standards and localized considerations (Roumell&Salajan, 2014). State-level regulations further shape the e-learning landscape, with specific requirements for online education, authorization processes for out-of-state institutions, consumer protection measures, and standards for program quality (Roumell&Salajan, 2014). This dual regulatory framework allows flexibility for institutions to tailor their e-learning offerings while ensuring compliance with national and state-level regulations.

Funding for e-learning initiatives in the USA is facilitated through various mechanisms, including federal and state-level allocations. The federal government allocates funds to support technological infrastructure, research, and innovation in higher education, while grant programs administered by the Department of Education provide financial support for

institutions exploring innovative approaches to digital education. Additionally, state appropriations to higher education institutions may include specific allocations for the development and enhancement of online courses and programs, ensuring the sustainability of e-learning platforms.

In Africa, the policy landscape for e-learning in higher education is shaped by individual country policies and the initiatives of regional organizations such as the African Union (AU) and the Association of African Universities (AAU) (Aluko, 2017). The AU's Agenda 2063 emphasizes the importance of education and technology, envisioning an Africa where education is accessible, relevant, and of high quality, leveraging technology as a catalyst for achieving these goals. Regional frameworks like Agenda 2063 provide a guiding vision for member countries to align their national policies with continental aspirations, reflecting variations in resources, infrastructure, and educational priorities. Individual African countries exhibit diverse approaches to e-learning policies, with some countries developing specific policies to promote and regulate e-learning platforms in higher education.

Governments across Africa are increasingly recognizing the potential of e-learning to address challenges related to access and quality in higher education, leading to initiatives such as the development of online courses, digital content creation, and the establishment of e-learning centers. Some countries have also explored public-private partnerships to fund and support e-learning initiatives, collaborating with private entities to leverage expertise, technology, and resources for the development and sustainability of e-learning platforms.

In conclusion, the comparative analysis of policy frameworks and institutional support for e-learning platforms in higher education reveals distinctive approaches in the USA and Africa. In the USA, the dual regulatory framework of federal and state-level policies, coupled with diverse funding mechanisms, provides a supportive environment for institutions to embrace digital education. In Africa, the role of regional organizations and evolving governmental initiatives highlights a collective effort to harness technology for educational advancement.The challenge for both regions lies in finding the right balance between regulatory oversight and fostering innovation. As technology continues to evolve and educational needs transform, policy frameworks must remain adaptable to ensure that e-learning platforms contribute to inclusive, quality education. By sharing best practices, lessons learned, and collaborating on regional and international levels, both the USA and African countries can contribute to a global landscape where e-learning is a transformative force in higher education.

6. Funding Mechanisms

The evolution of e-learning platforms in higher education is deeply intertwined with funding mechanisms, which play a pivotal role in shaping the accessibility, quality, and sustainability of digital education. This comparative review explores the funding landscape in the United States and Africa, delving into investments, funding models supporting e-learning in the USA, funding challenges in African higher education, and innovative funding solutions and partnerships in Africa.

In the USA, e-learning platforms in higher education have received substantial support from federal and state governments. Initiatives such as the Higher Education Act and the Distance Education Demonstration Program provide funding for the development and implementation of e-learning technologies (Rohayati et al., 2016). Federal grants, such as those from the Department of Education, support institutions in enhancing their digital infrastructure and expanding e-learning initiatives. Corporate and philanthropic investments significantly contribute to the funding of e-learning platforms in the USA. Tech giants, foundations, and ed-tech companies often collaborate with higher education institutions to develop and implement innovative e-learning solutions.

On the other hand, funding challenges in African higher education are pervasive, stemming from limited financial resources at the institutional and governmental levels. Many countries face competing priorities in sectors such as healthcare, infrastructure, and basic education, leading to constrained budgets for tertiary education. This limitation significantly impacts the allocation of resources to e-learning initiatives. The digital divide, characterized by inadequate digital infrastructure and connectivity, poses a substantial challenge in funding e-learning platforms in Africa. Developing the necessary infrastructure to support reliable internet access, purchase digital devices, and maintain online platforms requires significant investment. Recognizing the need for innovative funding solutions, African higher education institutions are increasingly exploring public-private partnerships. Collaborations with private entities, including technology companies and telecommunications providers, can bring in external funding and expertise. Philanthropic initiatives and international aid also play a vital role in addressing funding challenges in African higher education, providing grants and funding to support the implementation of e-learning platforms.

In conclusion, the funding mechanisms of e-learning platforms in higher education reveal distinct landscapes in the USA and Africa. While the USA benefits from a diverse range of funding sources, including government support, corporate investments, and tuition revenue, African higher education faces unique challenges related to limited financial resources, infrastructure constraints, and affordability issues. However, innovative funding solutions and partnerships in Africa, such as public-private collaborations, philanthropic initiatives, and regional networks, showcase a commitment to overcoming these challenges and advancing e-learning in the continent. As both regions navigate the complexities of funding e-learning platforms, a holistic and collaborative approach is essential to ensure that digital education becomes a transformative force in higher education on a global scale.

7. Pedagogical Shifts and Student Engagement

As e-learning platforms continue to revolutionize higher education globally, the pedagogical approaches and student engagement strategies employed play a pivotal role in shaping the learning experience. This comparative review delves into the evolving pedagogical shifts facilitated by e-learning in the United States and Africa. Additionally, it explores the dynamics of student engagement on these platforms, uncovering both challenges and opportunities, and assessing their impact on learning outcomes and student satisfaction.In both the USA and Africa, e-learning platforms have catalyzed a shift towards personalized learning experiences. Leveraging adaptive technologies, data analytics, and artificial intelligence, these platforms can tailor educational content to individual student needs. In the USA, where digital education is well-established, personalized learning is becoming more sophisticated. Institutions are exploring adaptive learning systems that adjust the pace and content based on individual progress, promoting a more tailored and effective educational experience.

The integration of e-learning and traditional teaching methods has given rise to blended learning models, which have become prevalent in both Africa and the USA. In Africa, personalized learning is a response to the diverse educational backgrounds and learning styles across regions, and e-learning allows for flexibility in accommodating various learning paces and preferences (Tarus et al., 2015). Challenges associated with the cultural and linguistic background of students and instructors, underdeveloped technological infrastructure, lack of local expertise in curriculum development for e-learning, and the lack of educational management mechanisms to support e-learning initiatives have been identified (Tarus et al., 2015). Blended learning in Africa involves a mix of online and offline resources, accommodating the limitations of internet connectivity and ensuring a more inclusive learning environment (Letseka&Pitsoe, 2018). Initiatives such as community access centers and offline content delivery are essential in mitigating disparities in internet connectivity and infrastructure (Landa et al., 2021).

In the USA, blended learning combines in-person instruction with online resources, offering flexibility, catering to different learning styles, and enhancing student engagement and collaboration (Cao, 2023). However, challenges related to the "digital divide" persist, influenced by socio-economic factors that impact access to high-speed internet and devices, thus affecting engagement levels among certain demographics (Okereke et al., 2020). The restructuring of schooling in the USA is emerging with blended learning, indicating a shift in educational systems in the digital age (Davis et al., 2013).

In Africa, where access to resources and infrastructure can vary significantly, blended learning provides a strategic solution, allowing institutions to maximize the benefits of e-learning while retaining essential elements of traditional education (Mutisya & Makokha, 2016). However, the adoption of e-learning in Africa is slow, as evidenced by the low number of African scholars who are familiar with teaching in an online environment (Mutisya & Makokha, 2016). Inadequate computer and internet facilities are major challenges that weaken online classes in Africa (Paschal &Mkulu, 2020). Similarly, in Kenya, lack of affordable Internet bandwidth has been identified as a major challenge in e-learning centers (Ooko, 2020).

Personalized learning and blended learning models have emerged as powerful tools in addressing educational disparities in Africa and the USA. While challenges related to infrastructure, internet connectivity, and socio-economic factors persist, initiatives to mitigate these disparities are essential for fostering a more inclusive and accessible higher education landscape.

Both regions face challenges associated with digital literacy and technical skills. Students need to navigate e-learning platforms, utilize digital tools, and adapt to various online communication methods. Providing support, training, and resources for enhancing digital literacy are crucial components of overcoming these challenges in both the USA and Africa.Sustaining interactivity and collaboration in an online environment is a shared challenge. The loss of face-to-face interactions can impact student engagement. Both regions are exploring innovative approaches, such as virtual labs, discussion forums, and collaborative projects, to recreate the collaborative aspects of traditional education within the

digital realm.E-learning platforms contribute to enhanced flexibility and accessibility, positively impacting learning outcomes. Students in both the USA and Africa have the flexibility to access materials at their own pace, contributing to a more personalized learning experience. This flexibility is particularly beneficial for non-traditional students, working professionals, and those with diverse learning needs.

E-learning platforms generate vast amounts of data that can be leveraged to gain insights into student engagement and performance. In the USA, institutions are increasingly using analytics to identify at-risk students, personalize interventions, and enhance overall learning outcomes. In Africa, where such data-driven strategies are still evolving, there is potential for leveraging analytics to identify areas of improvement and tailor support mechanisms.Assessing informal learning, such as student collaboration and discussions outside formal settings, poses challenges in the digital realm. Both regions are grappling with how to effectively measure and assess these informal aspects, ensuring a comprehensive evaluation of student engagement and satisfaction.

In conclusion, the evolving pedagogical approaches and student engagement strategies on e-learning platforms in higher education showcase the adaptability of educational systems in the USA and Africa. While challenges persist, opportunities for creating inclusive, flexible, and personalized learning environments are abundant. As both regions continue to refine their approaches, the collaborative exchange of best practices and the ongoing commitment to addressing disparities will be critical in shaping the future of higher education in the digital age.

8. Future Implications

The dynamic landscape of e-learning platforms in higher education is poised to shape the future of education globally. This comparative review, focusing on the USA and Africa, illuminates anticipated trends, potential policy adjustments, and technological advancements that will collectively define the trajectory of higher education in the digital age.Anticipated trends suggest a shift towards more personalized learning experiences, leveraging adaptive technologies and data analytics. In the USA, where e-learning is well-established, platforms may increasingly tailor content and assessments to individual student needs, optimizing the learning journey. In Africa, personalized learning can help address diverse learning styles and educational backgrounds, enhancing accessibility and inclusivity.

The integration of e-learning with traditional teaching methods is expected to gain prominence, with blended learning models offering flexibility and customization. While the USA may witness further refinement of blended learning approaches, Africa stands to benefit by blending digital education with local pedagogies, fostering a harmonious coexistence of traditional and digital learning experiences. E-learning platforms enable global collaboration, transcending geographical boundaries, and future trends indicate an increase in collaborative initiatives between institutions in the USA and Africa. Joint programs, virtual exchanges, and shared resources can facilitate cross-cultural learning experiences, enriching the education landscape on both continents (Amponsah & Bekele, 2023).

The future of e-learning may see an emphasis on micro-credentialing, allowing students to acquire specific skills and certifications. In the USA, this trend aligns with the demand for continuous upskilling and adapting to rapidly changing industries. In Africa, micro-credentialing can empower individuals with targeted skills, promoting lifelong learning and addressing workforce needs. Both the USA and African nations are likely to undergo policy adjustments to accommodate the evolving landscape of e-learning. Policymakers may focus on creating adaptive frameworks that support innovation, quality assurance, and equitable access. Flexibility in accreditation processes and recognition of online credentials could become key policy considerations (Bean et al., 2023).

Addressing the digital divide in Africa requires significant investment in digital infrastructure. Anticipated policies may prioritize initiatives to expand broadband access, improve connectivity, and provide affordable devices. Collaborative efforts between governments, private sectors, and international organizations will be essential to bridge the existing gaps. Both regions may witness increased emphasis on Open Educational Resources (OER) as a policy strategy. OER, including freely accessible educational materials, can enhance affordability and accessibility. Policymakers may explore incentives for educators to contribute to OER repositories, fostering a culture of knowledge sharing (Ngoepe &Saurombe, 2016).

With the proliferation of e-learning, ensuring the security and privacy of digital platforms will be a priority. Policymakers in both the USA and Africa are likely to introduce and enhance cybersecurity measures, safeguarding student data and maintaining the integrity of online assessments (Phillips et al., 2021).

The future of e-learning is expected to be closely intertwined with emerging technologies such as Artificial Intelligence (AI), Virtual Reality (VR), and Augmented Reality (AR) (Reynolds et al., 2013). These technologies are anticipated to

enhance engagement and interactivity in educational practices, transcending geographical limitations and fostering international collaborations (Mohamed et al., 2019). E-learning has the potential to democratize education by providing access to diverse student populations and addressing socio-economic disparities (Reynolds et al., 2013). The agility of e-learning platforms allows for swift responses to global challenges, as evidenced by the resilience of digital education during the COVID-19 pandemic (Reynolds et al., 2013).

Furthermore, joint research projects, virtual conferences, and cross-cultural interactions are expected to contribute to a more interconnected and enriched academic environment (Mohamed et al., 2019). Initiatives focusing on digital literacy, affordable access to technology, and adaptive learning resources are expected to contribute to a more equitable education landscape (Reynolds et al., 2013). The literature also indicates that using technology would improve the quality of care for patients in the context of nursing education (Harerimana& Mtshali, 2021).

In addition, collaborative e-learning is increasingly appealing to students and educational institutions as a learning approach (Barra et al., 2014). However, resistance to the adoption of technology by academic staff has been attributed to a lack of support and training in the integration of technology for curriculum delivery (Magunje&Chigona, 2021). It is essential to consider policy frameworks that support the responsible integration of these technologies into educational practices (Bekele et al., 2022).

The future of higher education involves leveraging e-learning for agile and adaptable responses to global challenges, whether they be health crises, climate change, or economic shifts (Reynolds et al., 2013). This necessitates a concerted effort to ensure inclusive education and to address socio-economic disparities (Reynolds et al., 2013). The potential for e-learning to democratize education and foster international collaborations highlights the transformative impact of technology on the future of education (Mohamed et al., 2019).

The future of higher education is characterized by a paradigm shift towards lifelong learning. E-learning platforms will play a crucial role in providing opportunities for continuous adaptation to evolving skill demands. This shift requires a cultural change, with individuals, institutions, and policymakers embracing the concept of education as a lifelong journey.In conclusion, the future implications of e-learning platforms in higher education for the USA and Africa are transformative. Anticipated trends, potential policy adjustments, and technological advancements collectively contribute to shaping a future where education is accessible, adaptive, and globally interconnected. As both regions navigate the complexities of this digital evolution, the collaborative spirit, and a commitment to inclusive and innovative education will be pivotal in ensuring a bright future for higher education in the digital age.

9. Conclusion

This comparative review has provided valuable insights into the e-learning landscapes of higher education in the USA and Africa. Examining historical evolution, prominent platforms, challenges, and initiatives has revealed both commonalities and distinct characteristics in how these regions approach digital education. The USA, a pioneer in educational technology, showcases a well-established e-learning infrastructure with widespread adoption of Learning Management Systems (LMS) and Massive Open Online Courses (MOOCs). In contrast, Africa grapples with challenges related to accessibility, connectivity, and diverse e-learning adoption rates. Initiatives and partnerships are emerging to address these challenges, emphasizing the adaptability and resilience of African higher education institutions.

The implications drawn from this comparative review extend beyond the present realities, offering valuable considerations for the future development of e-learning in higher education. The findings underscore the potential for e-learning to bridge socio-economic disparities, enhance access to quality education, and revolutionize pedagogical approaches. In the USA, where digital education is deeply ingrained, the challenge lies in ensuring that advancements in technology align with equitable access and inclusivity. In Africa, the journey involves leveraging innovative solutions to overcome infrastructure limitations, fostering regional collaborations, and tailoring e-learning strategies to diverse cultural and educational contexts.

As e-learning continues to evolve globally, a call for continued research and collaboration is paramount. This comparative review has illuminated the need for context-specific strategies, acknowledging the unique challenges and opportunities in each region. Researchers, policymakers, educators, and stakeholders must engage in ongoing collaboration to explore innovative solutions, share best practices, and shape policies that foster the effective integration of e-learning into higher education. Bridging the digital divide in Africa requires concerted efforts, such as infrastructure development, public-private partnerships, and a commitment to digital literacy. Simultaneously, the USA can contribute by sharing insights into optimizing e-learning for diverse student populations and addressing emerging challenges in an ever-evolving technological landscape.

In conclusion, the comparative review has laid the foundation for a nuanced understanding of e-learning platforms in higher education, highlighting the dynamic nature of digital education in the USA and Africa. The journey towards comprehensive and inclusive e-learning initiatives requires collective efforts, research-driven strategies, and a commitment to providing quality education for all, irrespective of geographical boundaries.

Compliance with ethical standards

Disclosure of conflict of interest

The author has no conflict of interest in this research.

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