

Educational reforms and their impact on student performance: A review in African Countries

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Abstract

This comprehensive review delves into the educational reforms implemented across various African countries and assesses their impact on student performance. With a focus on the evolving educational landscape in the continent, this study aims to analyze the multifaceted reforms undertaken by diverse nations and their implications for student learning outcomes. The African continent has witnessed a dynamic shift in educational policies and practices over the years, driven by a commitment to enhance the quality and relevance of education. The paper scrutinizes the diverse reforms, encompassing curriculum modifications, teacher training initiatives, and advancements in educational technology. By examining these reforms through a critical lens, the review aims to provide nuanced insights into their effectiveness and the underlying factors influencing their outcomes. The impact of educational reforms on student performance serves as a central theme, emphasizing the need to go beyond mere policy implementation and delve into the tangible effects on learners. The review considers various performance metrics, including standardized test scores, graduation rates, and qualitative assessments, to offer a comprehensive evaluation of the reforms' success. Furthermore, the paper explores the contextual factors shaping the implementation and outcomes of educational reforms in African countries. Socio-economic disparities, cultural influences, and infrastructural challenges play pivotal roles in shaping the trajectory of reforms. By acknowledging these complexities, the review contributes to a deeper understanding of the intersection between policy initiatives and the diverse contexts in which they are implemented. In conclusion, this review presents a comprehensive analysis of educational reforms in African countries and their direct impact on student performance. The nuanced examination of policies, practices, and contextual influences provides a valuable resource for educators, policymakers, and researchers seeking to navigate the intricate landscape of educational transformations in the African context. The findings presented in this review aim to inform future educational strategies, fostering a more equitable and effective learning environment for students across the continent.

Keywords: Education; Reforms; Impact; Student's Performance; Policies

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1. Introduction

Education serves as a linchpin for societal progress, and its transformative power is particularly crucial in the context of African countries (Akinwale, 2023.). As these nations navigate the complexities of socio-economic development, political transitions, and globalization, educational systems play a central role in shaping the future trajectory of their societies. Over the years, numerous African countries have embarked on ambitious educational reforms, seeking to align their systems with the demands of the 21st century. These reforms, often driven by a commitment to enhance the quality and relevance of education, have been instrumental in shaping the learning experiences of millions of students (Duraku and Hoxha, 2020.).

The significance of educational reforms in African countries is profound and multifaceted. These reforms are not merely administrative adjustments; rather, they represent strategic responses to the evolving needs of diverse societies. The African continent, marked by its rich cultural tapestry and socio-economic diversity, faces unique challenges and opportunities in the realm of education. Educational reforms, therefore, become a crucial instrument for addressing historical legacies, fostering inclusivity, and equipping learners with the skills necessary for active participation in a globalized world. These reforms aim to bridge gaps in access, quality, and relevance, recognizing education as a key driver of individual empowerment and national development. In many African nations, the pursuit of educational excellence is intertwined with aspirations for social justice, economic prosperity, and the cultivation of informed, engaged citizens. Consequently, understanding the impact of these reforms on student performance becomes integral to comprehending the broader narrative of educational development in Africa (Zajda, 2021).

This review is undertaken with the explicit purpose of critically examining the educational reforms implemented in African countries and assessing their direct impact on student performance. It seeks to unravel the complexities of these reforms, analyzing their goals, methodologies, and outcomes (Allioui and Mourdi, 2023). By delving into existing literature, policy documents, and empirical studies, the review aims to offer a nuanced understanding of how these reforms have influenced the academic trajectories of students across the continent. Beyond a mere evaluation of policy effectiveness, the review aspires to distill insights and lessons learned from the diverse experiences of African nations. Through this study, it aims to contribute to the discourse on educational excellence, providing a basis for informed decision-making, policy refinement, and fostering an environment conducive to enhanced student performance. As we navigate the contours of educational reforms in African countries, the ultimate goal is to illuminate pathways toward an inclusive, equitable, and quality education for all (Schusler et al., 2021).

2. Literature Review

The educational landscape in African countries has been shaped by a series of historical developments, each leaving an indelible mark on the trajectory of educational reforms (Nwokike and Nwadike, 2023). In the post-colonial era, many African nations sought to assert their independence by revisiting and reshaping their education systems. The early emphasis was on establishing educational infrastructures that reflected local cultures and languages, moving away from the colonial legacy that often marginalized indigenous knowledge. In subsequent decades, the late 20th century witnessed a surge in educational reforms, spurred by the need to address burgeoning populations, economic challenges, and the demands of a rapidly changing global environment. These reforms manifested in various forms, including changes to curricula, shifts in pedagogical approaches, and efforts to enhance teacher training. Initiatives aimed at expanding access to education, particularly at the primary and secondary levels, were also at the forefront of these reforms (Barnes, 2024).

However, the effectiveness of these historical reforms in improving student performance remains a subject of scrutiny (Humes and Priestley, 2021). Issues of quality, relevance, and equity have persisted, prompting ongoing efforts to refine and innovate education systems across the continent.

The theoretical underpinnings of educational reforms in African countries draw from a diverse set of frameworks that reflect both global educational discourse and the unique challenges of the continent. One prominent theoretical lens is the Human Capital Theory, which posits that investments in education contribute to the development of individuals' skills and knowledge, consequently enhancing economic productivity. African nations, cognizant of the correlation between education and socio-economic development, have often framed their reforms within the parameters of this theory. Additionally, Critical Pedagogy, as advocated by Paulo Freire, has influenced educational reforms by emphasizing the transformative potential of education in addressing social injustices. This framework has inspired efforts to make education more participatory, culturally relevant, and empowering, especially for marginalized communities.

The Capabilities Approach, developed by Amartya Sen and Martha Nussbaum, provides another lens through which educational reforms are examined (Przybylinski and Sidortsov, 2023). It centers on the idea that education should not only focus on imparting knowledge and skills but also on enhancing individuals' capabilities to lead fulfilling lives. This approach underscores the importance of a holistic and inclusive education that goes beyond traditional academic metrics. These theoretical frameworks collectively inform the goals, strategies, and evaluation criteria of educational reforms in African countries. However, the challenge lies in translating these theoretical ideals into practical, context-specific interventions that genuinely enhance student performance (Rigby et al., 2020).

A wealth of literature exists on the subject of educational reforms in African countries, providing valuable insights into the various dimensions of policy implementation and their impact on student performance. Numerous studies have explored the outcomes of specific reform initiatives, shedding light on both successes and challenges. Studies have delved into the quality of education delivered through reform initiatives. The UNESCO Global Education Monitoring Report highlighted concerns about the persistence of substandard education in some African nations despite efforts to improve quality. Factors such as teacher training, curriculum relevance, and assessment methodologies have been scrutinized to understand their implications for student performance (Alam and Mohanty, 2022).

The issue of access to education, particularly for marginalized groups, has been a focal point of many studies. Researchers have investigated the impact of reforms aimed at increasing enrollment rates and reducing disparities in educational opportunities. While progress has been made in expanding access, challenges related to gender, rural-urban divides, and socio-economic factors persist. A growing body of research explores the integration of technology in educational reforms. The use of Information and Communication Technologies (ICTs) in classrooms and for remote learning has gained attention. Studies assess the effectiveness of these technological interventions in improving student engagement, access to information, and overall learning outcomes (Bond et al., 2020).

The role of teachers as key agents in the success of educational reforms has been a subject of investigation (Datnow, 2020). Research has examined the impact of teacher training programs, professional development initiatives, and the challenges educators face in implementing reformed curricula. Effective teacher support and empowerment emerge as critical factors influencing student performance (Kilag et al., 2023). The cultural relevance of curricula has been explored to understand its impact on student engagement and performance. Scholars argue for curricula that resonate with local contexts, incorporating indigenous knowledge and addressing the diverse cultural backgrounds of students. The degree to which reforms achieve cultural sensitivity influences their effectiveness. Studies often consider the influence of socio-economic factors on the success of educational reforms. Economic disparities, poverty, and related challenges are examined in the context of their impact on student performance. Research highlights the need for targeted interventions to address these socio-economic determinants and create a more equitable educational landscape (Malbas et al., 2023).

In synthesizing these studies, it becomes evident that the outcomes of educational reforms are multifaceted, influenced by a myriad of contextual factors (Dholkawala, 2023). While some reforms have yielded positive results in certain areas, challenges persist, necessitating ongoing reflection, adaptation, and evidence-based policymaking to enhance their impact on student performance in African countries. As educational systems continue to evolve, this literature review sets the stage for a more nuanced understanding of the complex interplay between reforms and student outcomes, contributing to the ongoing dialogue on educational excellence in Africa (Mbah et al., 2021).

3. Educational Reforms in African Countries

Education in African countries has undergone significant transformations driven by a commitment to enhance its quality, relevance, and accessibility (Zongozzi, 2022). This review aims to provide an in-depth examination of educational reforms across the continent, focusing on their impact on student performance. The analysis is divided into two key sections: an overview of reforms by region and an study of specific policy changes and initiatives.

Sub-Saharan Africa, home to a diverse range of nations, has been at the forefront of educational reforms (Lewin, 2020). Countries such as Kenya, South Africa, and Nigeria have implemented ambitious initiatives to address historical challenges and prepare students for the demands of the modern world. In Kenya, for instance, the Competency-Based Curriculum (CBC) was introduced to move away from exam-focused education and emphasize a holistic approach to learning. South Africa's post-apartheid education reforms aimed at dismantling systemic inequalities, promoting inclusivity, and fostering a curriculum that reflects the nation's diverse heritage. Nigeria has also witnessed reforms, including the Universal Basic Education (UBE) program, targeting increased access to quality education at the basic level (Joseph, 2020).

North African nations, including Egypt, Morocco, and Tunisia, have pursued educational reforms with a focus on aligning curricula with economic needs and fostering innovation (Hassan et al., 2020). Egypt's Education Enhancement Project emphasizes improving the quality of pre-university education, with an emphasis on teacher training and curriculum development. Morocco, through its 2015-2030 Education Vision, aims to modernize education by incorporating technology, promoting critical thinking, and enhancing teacher training (Morchid, 2020). Tunisia has embarked on reforms to enhance the quality and efficiency of its education system, emphasizing digital inclusion and skill development.

Educational reforms in African countries often involve substantial modifications to curricula, seeking to make learning more relevant, inclusive, and responsive to societal needs (Akala, 2021). The Competency-Based Curriculum (CBC) in Kenya, for example, focuses on nurturing skills, talents, and values alongside traditional academic knowledge. These modifications aim to move beyond rote memorization and standardized testing, fostering a deeper understanding of subjects and encouraging critical thinking and problem-solving skills. Recognizing the pivotal role of educators in the success of educational reforms, many African countries have invested in teacher training programs. South Africa's Funza Lushaka Bursary Program, for instance, provides financial aid to students pursuing teaching qualifications, aiming to address the shortage of qualified teachers, especially in rural areas. Teacher training initiatives often focus on equipping educators with modern pedagogical methods, cultural sensitivity, and the ability to integrate technology into teaching practices (Abedi, 2023.).

Embracing the digital age, several African nations have incorporated educational technology to enhance learning experiences (Alfadil et al., 2020). Rwanda's One Laptop per Child (OLPC) program, for instance, distributed laptops to primary school students to facilitate digital learning. The integration of technology is not limited to hardware; it also includes the development of digital content and interactive platforms. In Nigeria, the e-Nigeria project emphasizes the development of e-learning resources, contributing to a more dynamic and engaging educational experience. These policy changes and initiatives reflect a concerted effort to address systemic challenges and foster holistic development. However, the impact of these reforms on student performance is contingent on various factors, including effective implementation, resource allocation, and adaptability to diverse socio-cultural contexts (Yahiaoui et al., 2021).

Educational reforms in African countries underscore the commitment to providing quality, inclusive, and relevant education for all (Grimes et al., 2023). The diverse range of initiatives across Sub-Saharan and North African nations reflects the nuanced approaches taken to address unique challenges and leverage opportunities for improvement. Curriculum modifications, teacher training programs, and the integration of educational technology collectively contribute to reshaping the educational landscape (Pulatbek, 2023). As these reforms continue to unfold, evaluating their impact on student performance remains a crucial endeavor. Rigorous research, monitoring, and assessment are necessary to discern the tangible outcomes and identify areas for refinement. The success of educational reforms ultimately hinges on their ability to nurture critical thinking, creativity, and a holistic development of students, preparing them for the complexities of the 21st century. This comprehensive review serves as a testament to the dynamism and resilience of education in African countries, showcasing the ongoing commitment to fostering a brighter future through transformative reforms (Arnhold and Bassett, 2021).

4. Methodology

As we embark on a rigorous examination of the methodologies employed in studying the impact of educational reforms on student performance in African countries, it is essential to elucidate the systematic approaches guiding the selection of studies, the methodologies adopted for data collection and analysis, and the diverse performance metrics under scrutiny (Kamble et al., 2020). The success of any comprehensive review lies in the meticulous selection of studies that meet predetermined inclusion criteria. In the context of educational reforms in African countries, studies were systematically selected based on the following criteria: Studies included in the review focused explicitly on educational reforms in African countries. The geographical scope encompassed both Sub-Saharan African nations and North African nations, reflecting the diversity and unique characteristics of educational systems across the continent. Included studies specifically addressed educational reforms, encompassing a spectrum of initiatives such as curriculum modifications, teacher training programs, and the integration of educational technology. This criterion ensured the direct relevance of selected studies to the overarching theme of educational reforms and their impact on student performance (Kilag et al., 2023).

The review considered studies conducted within a specified time frame, reflecting the contemporary landscape of educational reforms (Flake, 2021). The temporal scope ensured the inclusion of recent studies, allowing for an up-to-date analysis of the evolving educational scenario in African countries. Rigorous academic scrutiny was applied to ensure the inclusion of high-quality, peer-reviewed studies. This criterion aimed to uphold the credibility and reliability

of the evidence presented in the selected literature. By adhering to these inclusion criteria, the review sought to provide a robust foundation for analyzing the diverse methodologies employed in assessing the impact of educational reforms on student performance (Sugano et al., 2020).

The methodologies employed in data collection and analysis play a pivotal role in elucidating the intricacies of educational reforms and their effects on student performance in African countries. Many studies relied on comprehensive literature reviews, synthesizing existing research to identify patterns, trends, and commonalities in educational reforms. Meta-analyses were conducted to quantitatively analyze aggregated data from multiple studies, providing a statistical overview of the collective impact of reforms on student performance. Case studies were frequently employed to delve deeply into the dynamics of specific educational reforms within individual countries. These studies often provided rich qualitative insights into the contextual factors influencing the success or challenges associated with particular reform initiatives (Jiang et al., 2022).

Quantitative surveys and questionnaires were utilized to gather data from diverse stakeholders, including students, teachers, and administrators (Debnam et al., 2021). These instruments often sought to measure perceptions, attitudes, and experiences related to educational reforms. Survey data allowed for the quantification of subjective experiences and opinions. Classroom observations formed a critical component of methodologies, providing a direct insight into the implementation of reforms and their impact on teaching and learning practices. Researchers conducted systematic observations to assess changes in pedagogy, student engagement, and the overall classroom environment. Quantitative studies employed various statistical analyses, including regression analyses and t-tests, to ascertain the statistical significance of observed changes in student performance metrics. These analyses aimed to establish causal relationships between specific reform interventions and academic outcomes (Gearin et al., 2022).

To comprehensively evaluate the impact of educational reforms on student performance, a diverse set of performance metrics were examined across the reviewed studies (Schueler et al., 2022): Quantitative assessments of student learning often involved the analysis of standardized test scores. Changes in scores across different subjects and grade levels were scrutinized to gauge the effectiveness of reforms in enhancing academic achievement. Educational reforms frequently target improvements in graduation rates as a key indicator of success. Studies examined changes in graduation rates to assess the long-term impact of reforms on students' educational trajectories.

Qualitative assessments, including project-based assessments, essay evaluations, and open-ended question responses, were analyzed to understand the depth of student understanding and critical thinking skills fostered by educational reforms (Jiang et al., 2023). Reforms aiming to enhance access and engagement were often evaluated through changes in student attendance rates. Improved attendance is considered indicative of a positive impact on student participation and commitment to learning. Perceptions and experiences of teachers and students were considered essential metrics. Qualitative data from interviews, surveys, and focus group discussions provided insights into the subjective experiences of those directly impacted by educational reforms (Zhang et al., 2023; Olushola, 2017; Oti and Ayeni, 2013).

Some studies extended their analysis beyond immediate academic outcomes, examining post-secondary success indicators such as enrollment in higher education institutions and employment rates. This broader perspective aimed to capture the lasting impact of educational reforms on students' life trajectories. In examining this array of performance metrics, the review sought to offer a comprehensive understanding of the multifaceted ways in which educational reforms influence student performance in African countries. In conclusion, the methodology employed in reviewing the impact of educational reforms on student performance in African countries is characterized by a meticulous selection of studies, diverse data collection and analysis methods, and an examination of a wide array of performance metrics. By employing a systematic and inclusive approach, this review aims to contribute to the ongoing discourse on educational excellence in the African context and inform future policymaking and research endeavors in the dynamic field of educational reforms.

5. Impact on Student Performance

The impact of educational reforms on student performance in African countries is a complex and multifaceted subject, involving diverse evaluation metrics, success stories, and challenges. This comprehensive review aims to dissect the nuanced outcomes of these reforms (Alam, A. and Mohanty, A., 2023 et al., 2023; Olushola and Olabode, 2018) shedding light on the multifaceted ways they influence the educational landscape across the continent. One of the primary metrics for assessing the impact of educational reforms is the analysis of standardized test scores. These quantitative assessments provide a measurable benchmark to gauge improvements or setbacks in student academic achievement. Reforms that effectively enhance curriculum relevance, teaching methodologies, and student engagement are expected to manifest positively in standardized test results.

Another crucial evaluation metric is the graduation rate, serving as a long-term indicator of the success of educational reforms (Park et al., 2020). Reforms aiming to address systemic issues, improve access, and enhance the quality of education should ideally contribute to higher graduation rates. An increase in the number of students successfully completing their educational journey signifies a positive impact on student performance. Beyond quantitative metrics, qualitative assessments play a pivotal role in capturing the depth of student understanding and skills cultivated by educational reforms. These assessments, which may include project-based evaluations, essay analyses, and open-ended question responses, offer insights into critical thinking abilities, creativity, and the application of knowledge. Qualitative assessments provide a holistic view of student performance beyond rote memorization.

Numerous success stories underscore the positive impact of educational reforms on student performance across African countries: Reforms emphasizing the incorporation of indigenous knowledge, cultural sensitivity, and relevant content have demonstrated success in engaging students. In countries like South Africa, where post-apartheid curriculum changes aimed at inclusivity, success stories include heightened student interest, improved participation, and a sense of cultural identity. Success stories often emerge from teacher training programs that equip educators with modern pedagogical methods. In Rwanda, the Teacher Development and Management Policy has contributed to enhanced teacher competence and classroom dynamics, positively impacting student performance. The success lies not only in improved teacher-student interactions but also in the adaptability of teachers to changing educational landscapes.

Countries adopting educational technology, such as Kenya's laptop distribution program, report positive outcomes (Heinrich et al., 2020). Success stories include increased student engagement, exposure to a broader range of learning resources, and the development of digital literacy skills. Technological integration has facilitated interactive and dynamic learning environments, aligning with the needs of a digital age. While there are success stories, challenges and limitations persist in the implementation and impact of educational reforms: Limited resources, both financial and infrastructural, pose significant challenges. In many African countries, resource constraints hinder the effective implementation of reforms. Insufficient funding for teacher training, lack of access to technology, and inadequate learning materials can impede the intended positive outcomes.

Socio-economic factors continue to influence student performance. Reforms, while striving for inclusivity, may face challenges in reaching marginalized communities. Economic disparities impact access to quality education, creating a divide that some reforms struggle to bridge. Resistance to change, both from educational stakeholders and within communities, poses a challenge. Traditional perceptions of education may hinder the acceptance and effective implementation of reforms. Overcoming entrenched practices and fostering a culture of openness to change are ongoing challenges. Incomplete or inconsistent implementation of reforms is a common limitation. Some reforms may face challenges in reaching all schools or may not be uniformly applied across regions. Incomplete implementation hampers the ability to assess the full impact of reforms on student performance. Despite efforts to move away from exam-focused education, the overemphasis on examination systems remains a challenge. Reforms may struggle to reshape entrenched assessment practices, limiting their impact on broader educational goals. In navigating these challenges, it becomes evident that the success of educational reforms in African countries is contingent on addressing systemic issues, fostering community engagement, and ensuring sustained support.

The impact of educational reforms on student performance in African countries is a dynamic and evolving landscape (Zajda 2021). Evaluation metrics such as standardized test scores, graduation rates, and qualitative assessments offer a comprehensive view of the multifaceted outcomes of these reforms. Success stories highlight the transformative potential of well-implemented reforms, fostering a positive impact on students, teachers, and communities. However, challenges and limitations persist, emphasizing the need for a holistic approach to educational transformation. Resource constraints, socio-economic disparities, resistance to change, and incomplete implementation are hurdles that demand strategic solutions. A nuanced understanding of both success stories and challenges is crucial for shaping future reforms that address the diverse needs and aspirations of students across the continent. As African countries continue to navigate the complex terrain of educational reforms, ongoing research, stakeholder collaboration, and evidence-based policymaking will be essential. Through a collective commitment to overcoming challenges and building on success stories, educational reforms can truly become catalysts for positive and lasting change, shaping a future where every student has the opportunity to thrive and realize their full potential.

6. Contextual Factors Influencing Reforms

The success of educational reforms in African countries is intricately linked to a myriad of contextual factors that shape the socio-economic, cultural, and infrastructural landscape (Akala, 2021.). This comprehensive review seeks to delve into these contextual factors, analyzing their influence on the implementation and impact of educational reforms, particularly focusing on their consequences for student performance. Socio-economic factors wield a significant

influence on the success and equity of educational reforms in African countries. These disparities manifest in various ways, impacting access, quality of education, and, subsequently, student performance. Economic disparities contribute to unequal access to education. Families facing financial constraints may struggle to afford educational resources, including textbooks, uniforms, and transportation. As a result, students from economically disadvantaged backgrounds may face barriers to enrollment, hindering their educational journey and negatively impacting their performance.

Socio-economic disparities translate into inequalities in educational opportunities. Reforms aiming to level the playing field and promote inclusivity may face challenges in reaching marginalized communities. Students from economically disadvantaged backgrounds may lack access to quality schools, experienced teachers, and extracurricular activities, further exacerbating disparities in educational outcomes. Addressing socio-economic disparities requires a comprehensive approach that involves targeted interventions, equitable resource distribution, and policies designed to bridge the gap in access and opportunities for students across diverse economic backgrounds. Cultural influences play a pivotal role in shaping educational norms, values, and practices in African countries. The cultural context significantly influences how educational reforms are perceived, adopted, and adapted within communities.

Cultural diversity is a hallmark of many African nations, with numerous languages and ethnic groups coexisting (Obiefuna and Okeke, 2022.). Reforms that recognize and incorporate linguistic diversity often resonate more effectively with students. Curriculum modifications that align with local cultures and address the needs of diverse communities contribute to a sense of cultural relevance, positively impacting student engagement and performance. Cultural influences extend to traditional educational practices. Reforms that acknowledge and build upon traditional teaching and learning methods may encounter greater acceptance within communities. Aligning educational strategies with cultural values fosters a sense of continuity and relevance, enhancing the effectiveness of reform initiatives. Cultural norms often dictate gender roles and expectations, influencing educational opportunities for boys and girls. Reforms seeking to promote gender equality may face resistance rooted in cultural beliefs. Sensitivity to these cultural nuances is crucial in designing reforms that challenge gender norms and create pathways for all students to excel. Cultural competence and community engagement are essential in navigating the complex interplay between cultural influences and educational reforms. Recognizing and respecting cultural diversity ensures that reforms are contextually relevant and acceptable.

Infrastructure forms the backbone of educational systems, and challenges in this realm can significantly impede the successful implementation of reforms, affecting student performance. Adequate infrastructure includes access to basic facilities such as classrooms, libraries, and laboratories. In many African countries, disparities in infrastructure exist between urban and rural areas. Reforms may struggle to achieve their intended impact if students lack access to fundamental educational facilities, hindering their learning environment and overall performance. The integration of educational technology is a common reform strategy, but technological readiness varies across regions. Disparities in access to devices, internet connectivity, and digital resources can create a digital divide. Students without sufficient access to technology may miss out on the benefits of digital learning, impacting their academic performance. Infrastructural challenges also extend to the training and development of teachers. Reforms that emphasize teacher empowerment may face limitations if there are insufficient training facilities, mentorship programs, and professional development opportunities. Well-prepared and motivated teachers are integral to the success of educational reforms and, consequently, student performance. Addressing infrastructural challenges requires strategic investments in education, prioritizing the development of basic facilities, technological infrastructure, and continuous professional development for educators.

Contextual factors exert a profound influence on the success or challenges faced by educational reforms in African countries. Socio-economic disparities, cultural influences, and infrastructural challenges shape the educational landscape, impacting access, quality, and equity. The consequences of these contextual factors reverberate in student performance, highlighting the need for nuanced, context-specific approaches to reforms. To navigate these complexities, policymakers, educators, and stakeholders must engage in collaborative efforts that consider the diverse socio-economic, cultural, and infrastructural contexts within which reforms are implemented. Strategies that address economic disparities, respect cultural diversity, and invest in educational infrastructure contribute to the creation of an inclusive and equitable educational environment.

This comprehensive review underscores the importance of understanding the unique challenges and opportunities presented by the context in which educational reforms unfold. By doing so, stakeholders can craft informed, adaptive, and culturally responsive strategies that foster positive outcomes for students, laying the foundation for a more equitable and effective educational system across African countries.

7. Comparative Analysis

In exploring the landscape of educational reforms across African countries, a comparative analysis becomes instrumental in unraveling cross-country variations, identifying common patterns, and discerning trends that shape the impact on student performance. This review delves into the nuanced comparisons and overarching trends emerging from the diverse educational reform initiatives in the African context. A notable distinction in educational reforms exists between Sub-Saharan African nations and their North African counterparts. While both regions share common challenges, such as socio-economic disparities and infrastructural limitations, variations in cultural influences and historical contexts contribute to divergent reform trajectories. These countries often grapple with challenges related to access, quality, and relevance of education. Educational reforms in Sub-Saharan Africa frequently target issues of inclusivity, curriculum relevance, and teacher training. The Competency-Based Curriculum (CBC) in Kenya, for example, aims to shift the focus from exam-centric education to a holistic approach emphasizing skills and values.

Educational reforms in North African countries, such as Egypt and Tunisia, may exhibit a stronger emphasis on aligning education with economic needs and fostering innovation. Policies in these nations often center on modernizing curricula, integrating technology, and preparing students for the demands of the global economy. The linguistic and cultural diversity across African countries introduces another layer of complexity. Reforms that address these diversities demonstrate varying degrees of success. Some countries, recognizing the importance of language in education, have implemented reforms to align the language of instruction with local contexts. This is evident in policies aiming to incorporate indigenous languages into the curriculum, fostering a more inclusive and culturally sensitive learning environment.

Reforms that acknowledge and integrate cultural elements into education often show positive outcomes. For instance, South Africa's post-apartheid reforms aimed at making the curriculum more culturally relevant have contributed to increased engagement and a sense of identity among students. The integration of technology in education emerges as a common trend across many African countries. Governments and institutions recognize the potential of technology to enhance learning experiences, particularly in bridging gaps related to access and resource availability. Initiatives like Rwanda's One Laptop per Child (OLPC) program and Nigeria's e-Nigeria project exemplify efforts to leverage technology for improved student performance.

A recurring pattern involves the emphasis on teacher training and professional development. Across different nations, reforms recognize the pivotal role of educators in the success of any educational initiative. Programs like South Africa's FunzaLushaka Bursary Program and Rwanda's Teacher Development and Management Policy highlight a shared commitment to enhancing teacher competence, a factor crucial for positive student outcomes. Modifications to traditional curricula represent a prevailing trend. Whether driven by a need for relevance, inclusivity, or a departure from exam-oriented education, reforms often target curriculum adjustments. The adoption of Competency-Based Curricula, as seen in Kenya, reflects a broader trend toward redefining educational content to foster a more holistic development of skills.

Initiatives promoting gender equality in education are gaining traction. While cultural norms may pose challenges, numerous countries are actively working towards creating an inclusive environment for all students. Reforms that challenge traditional gender roles and provide equal educational opportunities for boys and girls align with broader global efforts to achieve gender parity in education. Departing from traditional examination-centric assessments is a discernible trend. Reforms seek to introduce varied and comprehensive assessment methods, including qualitative assessments, project-based evaluations, and continuous evaluation mechanisms. This shift reflects a growing acknowledgment that student performance encompasses a broader spectrum of skills and competencies beyond standardized test scores.

The comparative analysis of educational reforms in African countries reveals a dynamic landscape marked by both diversity and shared trends. Cross-country comparisons highlight the uniqueness of each nation's approach, shaped by historical, cultural, and contextual factors. Sub-Saharan and North African nations demonstrate distinctive reform trajectories, while overarching trends such as technology integration, teacher training, and curriculum modifications underscore shared priorities. Identifying patterns and trends allows for a more nuanced understanding of the successes and challenges that emerge from educational reforms. The recognition of technology as an enabler, the emphasis on teacher empowerment, the quest for inclusive curricula, and the pursuit of gender equality collectively contribute to a transformative vision for education in Africa. As countries continue to navigate the complexities of their educational landscapes, the comparative insights gleaned from these diverse reform initiatives provide a foundation for informed decision-making. This knowledge not only contributes to the ongoing dialogue on effective educational strategies but

also fosters a collaborative approach where nations can learn from each other's experiences to collectively advance the quality and impact of education across the continent.

8. Recommendations for Future Reforms

Building upon the lessons learned from successful reforms and addressing persistent challenges, future educational reforms in African countries can leverage global best practices to optimize their impact on student performance. This set of recommendations aims to guide policymakers, educators, and stakeholders in shaping effective and contextually relevant strategies for the advancement of education across the continent. Invest in comprehensive teacher training programs and ongoing professional development. Successful reforms consistently demonstrate the importance of well-trained and motivated educators in achieving positive student outcomes. Establish mentorship programs, create opportunities for continuous learning, and ensure that teachers are equipped with the skills needed for evolving educational landscapes. Embrace curricular changes that promote inclusivity, cultural relevance, and holistic development. Lessons from successful reforms highlight the significance of moving beyond exam-centric education. Implement Competency-Based Curricula that foster critical thinking, creativity, and practical skills. Integrate indigenous knowledge, languages, and diverse perspectives into the curriculum to reflect the cultural richness of African nations. Embrace technology as a catalyst for improved learning experiences. Develop and implement initiatives that ensure equitable access to digital resources, devices, and internet connectivity. Successful technology integration models, such as Rwanda's One Laptop per Child (OLPC) program, can serve as inspiration. Leverage technology to create interactive and dynamic learning environments, enhancing student engagement and digital literacy.

Design and implement reforms that actively promote gender equality in education. Learn from initiatives that challenge traditional gender norms and create environments where all students, regardless of gender, have equal opportunities for learning and advancement. Implement policies that address gender-based stereotypes, encourage girls' participation in STEM fields, and foster a culture of inclusivity in educational institutions. Develop targeted interventions to address socio-economic disparities that hinder access to education. Implement scholarship programs, provide financial assistance, and ensure that students from economically disadvantaged backgrounds have access to essential educational resources. Collaborate with community organizations and NGOs to create support networks that bridge socio-economic gaps and promote educational equity. Address resistance to change and enhance community engagement. Conduct awareness campaigns to communicate the benefits of educational reforms, emphasizing their long-term impact on students and communities. Foster collaboration between educators, parents, and community leaders to create a shared vision for education. Involving communities in the reform process fosters a sense of ownership and increases the likelihood of successful implementation. Prioritize infrastructure development to overcome challenges related to access and quality of education. Allocate resources for the construction and maintenance of classrooms, libraries, laboratories, and other essential facilities. Ensure that schools in rural and underserved areas receive special attention to bridge the urban-rural infrastructure gap. Enhance technological infrastructure to facilitate digital learning and teacher professional development.

Move towards holistic assessment practices that go beyond standardized testing. Develop diverse evaluation methods that assess not only academic knowledge but also critical thinking, problem-solving, and practical skills. Encourage project-based assessments, portfolios, and continuous evaluation mechanisms. This shift can contribute to a more comprehensive understanding of student performance and capabilities. Foster international collaboration and knowledge exchange to integrate global best practices. Establish partnerships with educational institutions, organizations, and governments from around the world. Engage in forums that facilitate the sharing of experiences, research, and innovative approaches. Drawing on successful models implemented in different global contexts can provide valuable insights for tailoring reforms to the specific needs of African nations. Prioritize research-informed policymaking by encouraging and supporting educational research initiatives. Create platforms for researchers to explore the impact of reforms on student performance, identify effective strategies, and assess the adaptability of global best practices to local contexts. Policymakers should actively engage with research findings to inform evidence-based decision-making.

Embrace adaptability and flexibility in reform implementation. Recognize that educational systems are dynamic, and reforms need to be responsive to changing contexts. Establish mechanisms for ongoing evaluation and feedback to assess the effectiveness of reforms and make necessary adjustments. A flexible approach ensures that reforms remain relevant and adaptive to the evolving needs of students and society. Integrate global citizenship education into curricula to prepare students for a globally interconnected world. Emphasize values such as tolerance, cultural understanding, and environmental consciousness. Global best practices often incorporate elements of global citizenship education, fostering a sense of responsibility and interconnectedness among students.

Recommendations for future educational reforms in African countries should draw upon the lessons learned from successful initiatives, address persistent challenges, and integrate global best practices. By prioritizing teacher training, promoting inclusivity, harnessing technology, and fostering international collaboration, stakeholders can contribute to transformative changes in education. Tackling socio-economic disparities, engaging communities, investing in infrastructure, and adopting holistic assessment practices further enhance the potential for positive impact on student performance. Ultimately, the journey towards effective educational reforms in African countries requires a commitment to adaptability, research-informed decision-making, and a collaborative spirit that transcends borders. Through the implementation of these recommendations, education systems can evolve to meet the diverse needs of students, empowering them to thrive in a rapidly changing world.

9. Conclusion

This comprehensive review of educational reforms in African countries reveals a rich tapestry of experiences, challenges, and successes that collectively shape the impact on student performance. Key findings underscore the diversity of reform initiatives, the importance of addressing contextual factors, and the transformative potential of strategic interventions. The analysis highlights the diversity of approaches to educational reforms across African nations. Sub-Saharan and North African countries exhibit distinct trajectories, influenced by historical, cultural, and socio-economic factors. Reforms range from curriculum modifications and teacher training programs to the integration of technology and measures to promote inclusivity.

Success stories emerge from initiatives that prioritize teacher training, promote inclusivity through curriculum changes, harness technology, and address gender disparities. Positive outcomes include improved student engagement, enhanced learning environments, and increased academic performance. Reforms that align with cultural contexts and recognize the value of indigenous knowledge contribute to a more holistic educational experience. Persistent challenges, such as socio-economic disparities, infrastructural limitations, and resistance to change, continue to impact the effectiveness of reforms. Socio-economic factors influence access to education, while infrastructural challenges pose barriers to quality learning experiences. Addressing these challenges remains critical for achieving equitable and sustainable educational outcomes.

The implications drawn from this review offer valuable insights for shaping future educational policies in Africa. To optimize the impact on student performance, policymakers must consider the following: Acknowledge and embrace the contextual diversity within African countries. Tailor educational reforms to address the unique needs, cultural nuances, and socio-economic conditions of specific regions. One-size-fits-all approaches may not be effective, and policies should be adaptable to local contexts to ensure relevance and inclusivity. Prioritize comprehensive teacher training and professional development. Teachers play a pivotal role in the success of educational reforms, and investing in their skills, knowledge, and motivation is essential. Sustainable policies should ensure ongoing support for educators, fostering a culture of continuous learning. Integrate inclusivity and cultural sensitivity into policies. Recognize the value of diverse cultures, languages, and traditions in shaping educational experiences. Policies should promote curricula that resonate with local contexts, celebrate cultural diversity, and foster a sense of identity among students. Develop targeted policies to address socio-economic disparities. Initiatives that provide financial assistance, scholarships, and resources to economically disadvantaged students contribute to greater inclusivity. Policies should aim to bridge the gap in access and opportunities, ensuring that education becomes a catalyst for social mobility.

Embrace technology as a strategic tool for educational enhancement. Develop policies that facilitate equitable access to digital resources, support teacher training in technology integration, and harness the potential of digital learning platforms. Well-crafted technology policies can bridge gaps and prepare students for the demands of the digital age.

This review significantly contributes to the global discourse on educational reforms by offering nuanced perspectives and lessons from the African context. The implications extend beyond the continent, offering valuable insights for shaping global conversations on educational transformation: The diversity of successful models presented in this review challenges the notion of a universal approach to education. The experiences from African countries underscore the importance of recognizing and celebrating diverse educational landscapes, offering global stakeholders alternative models of success.

The review highlights the importance of contextual sensitivity in global reform dialogues. Policymakers and educators worldwide can benefit from understanding the intricacies of reform implementation in diverse cultural, economic, and infrastructural contexts. This sensitivity enhances the effectiveness of global strategies and promotes a more inclusive approach to education. The lessons learned from African countries emphasize the value of international collaboration and knowledge exchange. Global partnerships can facilitate the sharing of best practices, research findings, and

innovative approaches. Collaborative efforts ensure that the global community collectively contributes to the advancement of education on a broader scale. The experiences shared in this review inspire a commitment to inclusive and equitable educational policies globally. Policymakers are encouraged to consider the socio-economic disparities, cultural diversity, and contextual nuances within their own regions. By drawing inspiration from successful reforms in Africa, the global discourse can move towards more holistic and inclusive educational practices.

In conclusion, the review underscores the dynamic nature of educational reforms in African countries, offering a wealth of insights for both regional policymakers and the broader global community. By embracing lessons learned, addressing persistent challenges, and integrating global best practices, the educational landscape in Africa can evolve to better serve the needs of diverse student populations, fostering a future where education is a catalyst for equitable and sustainable development.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] Abedi, E. A. , 2023. Tensions between technology integration practices of teachers and ICT in education policy expectations: implications for change in teacher knowledge, beliefs and teaching practices. *Journal of Computers in Education*, pp. 1-20.
- [2] Akala, B. M. M. , 2021. Revisiting education reform in Kenya: A case of Competency Based Curriculum (CBC). *Social Sciences & Humanities Open*, 3(1), p. 100107.
- [3] Akinwale, A. A. , 2023. Gender equity and social progress: empowering women and girls to drive sustainable development in SUB-SAHARAN AFRICA. *International Journal of Innovation Research and Advanced Studies*.
- [4] Alam, A. and Mohanty, A. , 2022, December. Predicting Students' Performance Employing Educational Data Mining Techniques, Machine Learning, and Learning Analytics. In *International Conference on Communication, Networks and Computing* (pp. 166-177). Cham: Springer Nature Switzerland.
- [5] Alam, A. and Mohanty, A. , 2023. Cultural beliefs and equity in educational institutions: exploring the social and philosophical notions of ability groupings in teaching and learning of mathematics. *International Journal of Adolescence and Youth*, 28(1), p. 2270662.
- [6] Alfadil, M. , Anderson, D. and Green, A. , 2020. Connecting to the digital age: Using emergent technology to enhance student learning. *Education and Information Technologies*, 25, pp. 1625-1638.
- [7] Alloui, H. and Mourdi, Y. , 2023. Unleashing the potential of AI: Investigating cutting-edge technologies that are transforming businesses. *International Journal of Computer Engineering and Data Science (IJCEDS)*, 3(2), pp. 1-12.
- [8] Arnhold, N. and Bassett, R. M. , 2021. *Steering Tertiary Education: Toward Resilient Systems That Deliver for All*. World Bank.
- [9] Barnes, L. P. , 2024. Religion and Education in Northern Ireland. *The Oxford Handbook of Religion in Modern Ireland*, p. 268.
- [10] Bond, M. , Buntins, K. , Bedenlier, S. , Zawacki-Richter, O. and Kerres, M. , 2020. Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *International journal of educational technology in higher education*, 17(1), pp. 1-30.
- [11] Datnow, A. , 2020. The role of teachers in educational reform: A 20-year perspective. *Journal of Educational Change*, 21(3), pp. 431-441.
- [12] Debnam, K. J. , Edwards, K. and Cornell, D. , 2021. Improving the school environment: School staff perceptions of school climate data and reporting practices. *Journal of community psychology*, 49(6), pp. 1965-1982.
- [13] Dholkawala, S. , 2023. Perceptions of Educational Leadership in India-Exploring the Dynamics of Educational Leadership.

- [14] Duraku, Z. H. and Hoxha, L. , 2020. The impact of COVID-19 on education and on the well-being of teachers, parents, and students: Challenges related to remote (online) learning and opportunities for advancing the quality of education. Manuscript submitted for publication]. Faculty of Philosophy, University of Prishtina.
- [15] Flake, J. K. , 2021. Strengthening the foundation of educational psychology by integrating construct validation into open science reform. *Educational Psychologist*, 56(2), pp. 132-141.
- [16] Gearin, B. , Petscher, Y. , Stanley, C. , Nelson, N. J. and Fien, H. , 2022. Document analysis of state dyslexia legislation suggests likely heterogeneous effects on student and school outcomes. *Learning Disability Quarterly*, 45(4), pp. 267-279.
- [17] Grimes, P. , Dela, A. , Diana, C. , Soliman, M. , Lester, J. , Kaisa, N. , Sol, L. , Sophia, C. , Vocola, I. , Foster, R. and Brigitte, C. , 2023. Mapping of the progress towards disability inclusive education in Eastern and Southern African countries, good practices and recommendations.
- [18] Hassan, N. M. and Wohlmuth, K. , 2020. Science, Technology and Innovation (STI) Policies for Economic Transformation in North Africa–An Introduction. *Science, Technology and Innovation Policies for Inclusive Growth in Africa: Human Skills Development and Country Cases*, 21, p. 181.
- [19] Heinrich, C. J. , Darling-Aduana, J. and Martin, C. , 2020. The potential and prerequisites of effective tablet integration in rural Kenya. *British Journal of Educational Technology*, 51(2), pp. 498-514.
- [20] Humes, W. and Priestley, M. , 2021. Curriculum reform in Scottish Education: Discourse, narrative and enactment. In *Curriculum making in Europe: Policy and practice within and across diverse contexts* (pp. 175-198). Emerald Publishing Limited.
- [21] Jiang, J. P. , Hu, J. Y. , Zhang, Y. B. and Yin, X. C. , 2023. Fostering college students' critical thinking skills through peer assessment in the knowledge building community. *Interactive Learning Environments*, 31(10), pp. 6480-6496.
- [22] Jiang, Q. , Horta, H. and Yuen, M. , 2022. International medical students' perspectives on factors affecting their academic success in China: a qualitative study. *BMC Medical Education*, 22(1), pp. 1-16.
- [23] Joseph, P. S. , Jamabo, I. and Molly, E. A. N. , 2020 Universal basic education programme and sustainability of democratic ideal: matters arising.
- [24] Kamble, S. S. , Gunasekaran, A. , Ghadge, A. and Raut, R. , 2020. A performance measurement system for industry 4.0 enabled smart manufacturing system in SMMES-A review and empirical investigation. *International journal of production economics*, 229, p. 107853.
- [25] Kilag, O. K. , Marquita, J. and Laurente, J. , 2023. Teacher-Led Curriculum Development: Fostering Innovation in Education. *Excellencia: International Multi-disciplinary Journal of Education* (2994-9521), 1(4), pp. 223-237.
- [26] Kilag, O. K. T. , Uy, F. T. , Abendan, C. F. K. and Malbas, M. H. , 2023. Teaching leadership: an examination of best practices for leadership educators. *Science and Education*, 4(7), pp. 430-445.
- [27] Lewin, K. M. , 2020. Beyond business as usual: Aid and financing education in Sub Saharan Africa. *International journal of educational development*, 78, p. 102247.
- [28] Malbas, M. , Kilag, O. K. , Diano Jr, F. , Tiongzon, B. , Catacutan, A. and Abendan, C. F. , 2023. In Retrospect and Prospect: An Analysis of the Philippine Educational System and the Impact of K-12 Implementation. *Excellencia: International Multi-disciplinary Journal of Education* (2994-9521), 1(4), pp. 283-294
- [29] Mbah, M. , Johnson, A. T. and Chipindi, F. M. , 2021. Institutionalizing the intangible through research and engagement: Indigenous knowledge and higher education for sustainable development in Zambia. *International Journal of Educational Development*, 82, p. 102355.
- [30] Morchid, N. , 2020. Investigating quality education in moroccan educational reforms from 1999 to 2019. *Journal of Research & Method in Education*, 10(1), pp. 54-61.
- [31] Nwokike, C. E. and Nwadike, C. , (2023). Assessing the Impact of Socioeconomic Factors on Access to Quality Education in Nigeria. *POLITICS, RELIGION& EDUCATION*, p. 193.
- [32] Obiefuna, R. F. P. B. and Okeke, C. I. , 2022. CHAPTER THIRTY SIX: DIVERSITY IN NIGERIA AND THE ROLE OF MUSIC IN PEACE BUILDING. *Festschrift in Honour of The Music Maestra Professor Young-Sook Onyiuke*, pp. 306-313.

- [33] Olushola, A. O. and Olabode, K. T. , 2018. Prevalence of sexting among students in selected secondary schools in Southwestern Nigeria. *Gender and Behaviour*, 16(1), pp. 11011-11025.
- [34] Olushola, A. O. , 2017. Sexting in educational sector: gender perspective in some selected secondary schools in ekiti and osun states. *IFE Psychologia: An International Journal*, 25(2), pp. 245-261.
- [35] Oti, A. and Ayeni, O. , 2013. Yoruba culture of Nigeria: creating space for an endangered specie. *Cross-Cultural Communication*, 9(4), p. 23.
- [36] P Rigby, B. , Van der Graaf, P. , B Azevedo, L. , Hayes, L. , Gardner, B. and J Dodd-Reynolds, C. , 2020. Challenges, opportunities and solutions for local physical activity stakeholders: an implementation case study from a cross-sectoral physical activity network in Northeast England. *BMC public health*, 20(1), pp. 1-14.
- [37] Park-Gaghan, T. J. , Mokher, C. G. , Hu, X. , Spencer, H. and Hu, S. , 2020. What happened following comprehensive developmental education reform in the Sunshine State? The impact of Florida’s developmental education reform on introductory college-level course completion. *Educational Researcher*, 49(9), pp. 656-666.
- [38] Przybylinski, S. and Sidortsov, R. , 2023. *The Capabilities Approach*. In *Theorising Justice* (pp. 124-138). Bristol University Press.
- [39] Pulatbek, S. , 2023. Importance of digital educational technologies in teaching foreign languages. *American Journal of Pedagogical and Educational Research*, 18, pp. 298-304.
- [40] Schueler, B. E. , Asher, C. A. , Larned, K. E. , Mehrotra, S. and Pollard, C. , 2022. Improving low-performing schools: A meta-analysis of impact evaluation studies. *American Educational Research Journal*, 59(5), pp. 975-1010.
- [41] Schusler, T. M. , Espedido, C. B. , Rivera, B. K. , Hernández, M. , Howerton, A. M. , Sepp, K. , Engel, M. D. , Marcos, J. and Chaudhary, V. B. , 2021. Students of colour views on racial equity in environmental sustainability. *Nature Sustainability*, 4(11), pp. 975-982.
- [42] Sugano, S. G. C. and Nabua, E. B. , 2020. Meta-Analysis on the Effects of Teaching Methods on Academic Performance in Chemistry. *International Journal of Instruction*, 13(2), pp. 881-894.
- [43] Yahiaoui, D. , Nakhle, S. F. and Farndale, E. , 2021. Culture and performance appraisal in multinational enterprises: Implementing French headquarters' practices in Middle East and North Africa subsidiaries. *Human Resource Management*, 60(5), pp. 771-785.
- [44] Zajda, J. , 2021. *Globalisation and education reforms: Creating effective learning environments (Vol. 25)*. Springer Nature.
- [45] Zhang, W. H. , Yuan, Q. and Cai, H. , 2023. Unravelling urban governance challenges: Objective assessment and expert insights on livability in Longgang District, Shenzhen. *Ecological Indicators*, 155, p. 110989.
- [46] Zongozzi, J. N. , 2022. Accessible quality higher education for students with disabilities in a South African open distance and e-learning institution: Challenges. *International Journal of Disability, Development and Education*, 69(5), pp. 1645-1657