

# The evolution of education in Rwanda: From traditional roots to modern reforms

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## Abstract

Rwanda's economic, social, and political revolution has been centered on education. This study examines the history of Rwanda's educational system, from traditional pre-colonial indigenous learning methods to current initiatives aimed at promoting the country's development. The research examines four key periods from a historical and policy perspective, encompassing pre-colonial community-based education, colonial missionary-led schooling, post-independence reforms, and the massive reconstruction that occurred after the 1994 Genocide against the Tutsi. According to the findings, post-independence efforts increased access and fostered a national identity, but they also undermined indigenous knowledge systems and exacerbated societal inequalities due to enduring structural limitations. Conversely, the post-genocide reforms represented a significant turning point with changes to language policy, the introduction of Universal Primary Education, nine- and twelve-year basic education, the competency-based curriculum, and the extension of technical and vocational education and training (TVET) to improve regional and global integration. Other notable accomplishments highlighted by the study include greater enrollment, increased gender equality, ICT integration, and more possibilities for higher education. Ongoing issues still exist, including remarkably low adult literacy rates, a shortage of skilled teachers, limited graduate programs, and financial constraints. In general, the study finds that sustained investment in educational quality, equity, and skills development is necessary to realize Rwanda's Vision 2050 and promote long-term national development.

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## 1. Introduction

Education is widely recognized as a crucial engine of national development, impacting living standards, employment opportunities, social cohesion, and successful governance. In the case of Rwanda, the education system has evolved through numerous unique eras, affected by indigenous learning traditions, colonial administration, post-independence reforms, and statewide reconstruction following the 1994 Genocide against the Tutsi. Therefore, a full grasp of this evolution is vital for interpreting current difficulties and the challenges that continue to define the industry today.

In this regard, the current study investigates how Rwanda's educational system has evolved from pre-colonial times to the present. It specifically examines how colonial policies transformed conventional educational systems, how the post-independence government sought to expand educational opportunities, and how significant reforms after 1994 aimed to advance socioeconomic development, equity, and

national cohesion. The study also emphasizes the importance of education to the process of nation-building and to Rwanda's integration into regional and international society. As a result, this historical analysis provides a basis for understanding the current strengths and enduring challenges in Rwanda's educational system.

## **2. Literature review**

### **2.1. Pre-Colonial Education in Rwanda**

Before colonialism, Rwanda's educational system was known for its all-encompassing, pragmatic, and community-focused approach, emphasizing the transfer of skills, values, and customs via daily life. Children in this setting received education through group activities such as farming, animal care, building, and ceramics (Mikidady, 2021). This is a sign of an educational system deeply entwined with social life, intended to create self-sufficient and socially conscious people. Additionally, oral traditions, proverbs, and storytelling served as essential teaching tools that imparted leadership, civic duty, and ethics (Rwigema, 2025). This illustrates how traditional education fosters social cohesion and intergenerational continuity by reinforcing moral ideals and cultural identity, as well as imparting practical information.

Furthermore, it has been shown that gender roles significantly shape learning possibilities. Girls were trained in childcare, weaving, and household duties, while boys were trained in herding, hunting, and defense (Mikidady, 2021). Even though these boundaries would seem to limit people by today's standards, they ensured that all members of society learned vital skills related to their specific social roles. Pre-colonial education, which placed a strong emphasis on group achievement, shared responsibility, and cultural preservation, remained closely aligned with social demands despite the gendered differences noted earlier (Duncan, 2022). As a result, it can be claimed that Rwandan traditional education was both adaptive and functional, promoting both the sustainability of indigenous knowledge systems and communal stability.

### **2.2. Colonial Education**

The time of colonial administration in Rwanda, first under Germany (1897–1916) and then under Belgium (1916–1962), represented a significant departure from the nation's pre-colonial, community-focused educational system. The missionaries maintained most of the formal education during this time, which was intended to advance the goals of the colonial governments rather than the interests of the indigenous people. The focus of education was on literacy, Christian teachings, and European values, while practical skills and indigenous knowledge were ignored (Duncan, 2022). Due to its exclusivity, the educational system frequently favored youngsters from privileged households or ethnic groups. Moreover, understanding colonial education is vital to fully grasp post-independence problems and reforms in Rwanda fully, as it reinforced social hierarchies and set the stage for long-lasting educational inequalities.

#### **2.2.1 German Period (1897–1916)**

Although formal education in Rwanda commenced under German colonial administration, access was strictly limited to children of affluent families or those selected for missionary purposes. Furthermore, despite the curriculum's paucity of practical and technical instruction, it placed considerable emphasis on Christian ideation and reading (Duncan, 2022). This phenomenon underscores that, rather than fostering local empowerment or socioeconomic growth, colonial education primarily served the interests of missionaries and colonial governments. Indeed, within the colonial context, educational institutions were established according to a hierarchical structure that placed significant emphasis on obedience and subordination. Consequently, the primary objective of this pedagogical approach was to cultivate students who were prepared to assume roles within the colonial administration (Abraham, 2020). This suggests that the primary function of education was to maintain social order and perpetuate the colonial administrative system, rather than to cultivate independent or critical thinking.

#### **2.2.2. Belgian Mandate (1916–1962)**

The Belgian government pursued a policy of expanding missionary schools while concurrently fortifying ethnic and social stratification. For instance, (2025) and Abraham (2020) argued that ethnic groups were given preferential access to educational opportunities, thereby creating long-term inequality. This observation indicates that the establishment of ethnic divisions was significantly reinforced by

colonial education, which subsequently led to social and political strife in Rwanda. Moreover, according to Duncan (2022), indigenous knowledge and local languages were historically marginalized, and the curriculum incorporated subjects such as French, mathematics, and European history.

This combination underscores the cultural estrangement that characterized colonial education, as it devalued long-established Rwandan customs and promoted Western ideas as the pinnacle of cultural and intellectual achievement. By the 1950s, the field of vocational education remained largely unregulated, and rural literacy rates remained below 20% (Sibomana et al., 2025). The evidence presented herein underscores the exclusionary and ineffective nature of the colonial education system, which failed to address the developmental needs of the population as a whole.

### **2.3 Post-Independence Education (1962–1994)**

Following its independence in 1962, Rwanda launched ambitious projects to expand educational access and eliminate colonial-era relics. Seeking these goals, the administration launched a free elementary education program in certain areas, expanded teacher training initiatives, and founded the National University of Rwanda in 1963 to advance higher learning and national capacity-building (Ministry of Education, 2023). Moreover, curriculum changes aimed to reclaim cultural identity by including Rwandan history, civics, and Kinyarwanda. Therefore, reinforcing a sense of national unity and self-determination (Murenzi, 2025). These projects show a deliberate effort to align education with the post-independence vision of social fairness and nation-building.

Even after these forward-looking changes were implemented, educational inequity remained firmly ingrained. Rural communities face significant challenges in accessing secondary and higher education amid educational inequalities (Ngege, 2025). The preponderance of French as the primary language of instruction further excluded participation and inclusion, thereby perpetuating a language barrier that obstructed the full engagement of rural areas in the school system (Abraham, 2020). Moreover, the industry continued to struggle with issues such as insufficient teacher preparation, a lack of vocational education, and a shortage of classrooms. Together, the interplay of these elements impedes the employability of young people and the economic development of society (Duncan, 2022). These difficulties highlight the ongoing influence of colonial educational systems and the complexities of effecting change within the comparatively short post-independence period.

### **2.4 Post-Genocide Educational Transformation in Rwanda**

Rwanda is a small, landlocked nation in East-Central Africa, with an estimated land area of 26,338 square kilometers. The country has historically confronted significant socio-political challenges, most notably the 1994 genocide. Over a period of approximately 100 days, Rwandan armed forces, extremist militias, and radicalized civilians from the ethnic Hutu majority killed an estimated one million ethnic Tutsis and political opponents, thereby constituting one of the most severe genocides since World War II (World Education News Reviewers, 2019). During this period, approximately one-third of the population was displaced as the Rwanda Patriotic Front (RPF) advanced toward Kigali, the capital city. Consequently, approximately two million people, predominantly Hutus, fled to neighboring countries (Onay, 2025). Therefore, all sectors of society, including education, encountered substantial disruption.

In this context, the education system in Rwanda was particularly impacted by the genocide. Specifically, Sibomana et al. (2025) reported that more than 75% of teachers and administrative staff were either killed or forced into exile. Consequently, the nation experienced a substantial loss of human capital essential for maintaining educational continuity. Moreover, the destruction of schools and the collapse of institutional structures resulted in the exclusion of thousands of children from formal education (Onay, 2025). This decline, over time, has contributed to a generational gap in leadership capacity, professional skills, and literacy levels (Ministry of Education, 2023). Consequently, education was identified as a pivotal component in Rwanda's post-genocide recovery strategy.

In response to these challenges, the post-genocide government prioritized education as a key instrument for national reconciliation and socioeconomic reconstruction. Consequently, policies were formulated to ensure equitable access to education irrespective of ethnicity, gender, or socioeconomic status. Furthermore, with the backing of international organizations such as UNICEF and UNESCO, the government undertook school reconstruction, furnished learning materials, and initiated teacher training

programs (Duncan, 2022). Consequently, international collaboration proved pivotal in rebuilding Rwanda's educational infrastructure.

Despite this, although student enrollment had largely recovered by 2000, significant disparities in educational quality persisted, particularly in rural areas (World Education News Reviewers, 2019). Conversely, challenges with infrastructure and teacher availability remained unresolved. To address these gaps, the government introduced Universal Primary Education (UPE) in 2003. Consequently, enrollment increased substantially, and by 2013 the Gross Enrolment Ratio (GER) surpassed 100%, indicating nearly universal access at the primary level (World Education News Reviewers, 2019). In general, the aforementioned reforms exemplify Rwanda's unwavering dedication to educational recovery and expansion.

### **3. Structure and Administration of Education**

Rwanda has undergone significant reforms to its educational system following the 1994 Tutsi genocide. Education became a pillar for national rebuilding, reconciliation, and sustainable socioeconomic growth after the catastrophe. Recognizing education as a basic means of rebuilding human capital, fostering unity, and helping national development objectives, the government saw it (Sibomana et al., 2025). Therefore, several changes were implemented to enhance quality, increase accessibility, and align learning objectives with the goals outlined in Vision 2050.

The Rwandan education system is structured in accordance with a 3–6–3–3–4 model, comprising three years of pre-primary education, six years of primary education, three years of junior secondary education, three years of senior secondary education, and three to four years of higher education (Ministry of Education, 2023). Within this structure, compulsory education comprises primary and lower secondary schooling, implemented through a nine-year program that commences at age seven and concludes at age fifteen (Dufitumukiza et al., 2020). This compulsory cycle, widely known as Nine Years Basic Education (9YBE), was implemented to ensure universal access to basic education and to mitigate school dropout rates.

In practice, students who demonstrate weaker academic performance often enroll in 9YBE day schools, which are strategically located within local communities to enhance accessibility and minimize the financial burden on families. At the foundational level, pre-primary education spans three years and targets children aged four to six. Specifically, this stage is characterized by the cultivation of fundamental competencies in literacy, numeracy, communication, and social interaction. Consequently, the program establishes a robust foundation for ongoing learning and facilitates a seamless transition into primary education. Furthermore, pre-primary education fosters comprehensive early childhood development, thereby equipping learners for future academic achievement and social integration.

According to the government's universal basic education policy, six-year elementary schooling is mandatory and without cost. While fostering values such as patriotism, cooperation, and environmental awareness, the programme emphasises the development of literacy, arithmetic, scientific investigation, and practical life skills (Dufitumukiza et al., 2020). Upon programme completion, students take the Primary Leaving Examination (PLE), which makes them eligible for lower secondary schooling. Furthermore, this level is essential for reducing illiteracy and advancing equal access to educational opportunities nationwide. Junior secondary education (3 years) is the second stage of the Nine-Year Basic Education (9YBE). At this stage, students begin exploring several subjects, thereby preparing for specialization at the following level (Muhammad Magaji et al., 2023). Moreover, this stage serves as a bridge between elementary and senior secondary education, ensuring a smoother transition and continuity in learning.

Extending over three years, senior secondary education lets pupils concentrate on one of three clearly defined paths: general, technical, or vocational. In the field of Technical and Vocational Education and Training (TVET), the focus is on imparting skills appropriate to the needs of the national labor market, so guaranteeing the relevance and practical value of the educational programme for its target audience. Therefore, this level is essential for creating a capable and competitive workforce that supports Rwanda's economic growth.

Universities, polytechnics, and other higher education institutions that grant diplomas, bachelor's degrees, and postgraduate degrees make up tertiary education (3–4 years). Additionally, research, innovation, and professional ability are emphasized at this level to propel socioeconomic progress.

Moreover, universities and TVET institutions encourage business, digital literacy, and industry partnerships.

Unlike memorization, Rwanda's educational system, guided by the Competence-Based Curriculum (CBC), emphasizes the growth of practical abilities, good values, and critical thinking. English is the primary language of instruction; Kinyarwanda is used in lower levels to strengthen basic reading abilities. Including French and Kiswahili also aims to improve regional integration and communication. Through an inclusive, skill-oriented, and value-driven approach to learning, the education system seeks to provide students with the knowledge and values needed to address both local and worldwide issues.

Ultimately, Rwanda's education system is continually evolving through well-planned policies such as the Nine Years Basic Education (9YBE) and Twelve Years Basic Education (12YBE), which aim to ensure fair access and completion of basic education for everyone (Dufitumukiza et al., 2020). Closely related to Vision 2050, a Rwandan government plan meant to turn Rwanda into a knowledge-based, high-income nation, these projects support. Therefore, it is necessary to build a trained workforce able to propel sustainable national development, so the ongoing focus on competence-based learning, research, innovation, and vocational skills development is vital.

#### **4. Key Achievements of Rwanda's Education System**

Rwanda has made significant changes to its educational system to make it inclusive, high-quality, and responsive to socioeconomic demands. Through the implementation of strategic policies, investments, and creative projects, the nation has reached several significant milestones across various facets of education. Moreover, these accomplishments demonstrate Rwanda's resolve to equip its people with the knowledge, skills, and values needed for personal development, job readiness, and national growth.

##### **4.1. Universal Access to Basic Education**

Through the Nine-Year Basic Education (9YBE) and Twelve-Year Basic Education (12YBE) curricula, Rwanda has successfully reached virtually universal enrolment at the primary school level. These initiatives provide free education up to the lower secondary level, thereby lowering dropout and repetition rates (Ministry of Education, 2023; Muhammad Magaji et al., 2023). Additionally, Niyonzima (2025) argues that ensuring that girls and other children from rural and disadvantaged backgrounds attend school consistently has been essential to laying a solid foundation for lifelong learning. This has been made possible by expanding access and enacting fair policies. Additionally, equal access policies guarantee that underprivileged communities can profit from educational opportunities, therefore strengthening national development objectives and social inclusion.

##### **4.2. Implementation of the Competence-Based Curriculum (CBC)**

Launched in 2015, the Competence-Based Curriculum (CBC) shifted the emphasis from information gathering to a learner-centered approach that stresses skills, attitudes, and values (REB, 2015; Ndiokubwayo et al., 2020). Thus, students are urged to improve their communication, teamwork, critical thinking, and problem-solving skills so that educational outcomes meet the needs of the labor market (Nsengimana, 2021). Moreover, the CBC includes moral and civic education to guarantee that students grow into responsible and socially sensitive citizens. Therefore, this approach helps advance national development goals and personal development.

##### **4.3. Expansion of Technical and Vocational Education and Training (TVET)**

To address youth unemployment and skills gaps, Rwanda has invested heavily in Technical and Vocational Education and Training (TVET) institutes, thereby making TVET a central component of the country's economic transformation plan (Jamaludin et al., 2023). For example, the founding of Rwanda Polytechnic (RP) in 2017 brought together vocational colleges, thereby improving the quality, standardization, and relevance of programs (Rwanda Polytechnic, 2024). Institutions under the Ministry of Education (MINEDUC) have been known to offer a broad range of courses in ICT, engineering, agriculture, and hospitality (Ministry of Education, 2023).

As a result, students develop real, industry-relevant abilities, improve their employability, and help to advance economic growth. The growing number of TVET students nationwide, reaching over

60,000 by 2023, suggests the government's support for skills-based education. Particularly in historically male-dominated disciplines, the system also stresses internships, practical learning, and gender inclusivity (Nsengimana, 2021; Niyonshuti et al., 2025). Rather than just an addition to regular education, the Rwandan administration sees vocational education as a significant engine for employability, innovation, and sustainable development.

#### **4.4. Gender Equality in Education**

Due to continuous policy initiatives and educational reforms, Rwanda has attained gender equality in primary and secondary education. Girls' participation in technical and scientific domains has increased significantly thanks to initiatives like the Girls' Education Policy (2008), targeted scholarships, and STEM-focused programs, which have paved the way for further education and professional careers (UNICEF, 2023; Niyonzima, 2025). By guaranteeing fair access to high-quality education, these policies encourage inclusive learning environments that benefit both boys and girls. By enabling women to participate fully in the economic, social, and political spheres, the push for gender equality enhances Rwanda's human capital potential and fosters national development (Edd, 2022). Furthermore, studies show that initiatives promoting girls' education increase their social and economic participation by fostering leadership, independence, and community development. Rwanda tackles historical inequities and establishes a foundation for inclusive, sustainable development that benefits individuals, families, and society as a whole by incorporating gender-responsive measures into education.

#### **4.5. Integration of ICT in Education**

Through programs like the Smart Classroom Initiative and the One Laptop per Child (OLPC) project, Rwanda has embraced digital technology. Studies have shown that these initiatives increase teachers' and students' digital literacy, enhance access to instructional materials, and foster interactive learning (Murenzi, 2025; Ministry of Information, 2022; Ngenzi et al., 2021). Moreover, the inclusion of ICTs has helped foster 21st-century skills, develop cutting-edge teaching techniques and e-learning systems, and thus equip pupils to succeed in a technology-driven economy (Abel & Tondeur, G. S., 2022). Moreover, it has been proven to help close educational achievement gaps between rural and urban regions by providing access to distance learning opportunities and online resources.

#### **4.6. Language Policy and Multilingual Education**

Rwanda's language policy promotes the inclusion of Kinyarwanda, English, French, and Kiswahili in schools. Following a major linguistic reform in 2009, English replaced French as the primary language of instruction (World Education News Reviewers, 2019; Rosendal & Ngabonziza, 2023; Barrett et al., 2025). This change was meant to make it easier to integrate into the East African Community (EAC) and to boost participation in the global economy. Moreover, the inclusion of Kiswahili alongside other languages enhances regional communication, commerce, and cultural understanding.

Still, the switch to English presented early difficulties due to poor teacher competence and insufficient teaching materials. In response to these issues, the government launched ongoing instructor retraining and professional development initiatives to address these deficits. Moreover, multilingual education has been proven to improve access to global information, cognitive development, and communication skills, thereby producing students who are both locally rooted and globally savvy (Barrett et al., 2025). The policy change under investigation in this paper clearly highlights Rwanda's general vision of education as a means of globalization, regional competitiveness, and linguistic and financial correction.

#### **4.7. Improved Teacher Development and Professionalization**

Rwanda's educational reform program has identified teacher professional development as a pivotal strategy to enhance the quality of education. Specifically, investments in programs such as Continuous Professional Development (CPD) provide teachers with modern teaching techniques, classroom management skills, and ICT integration, thereby fostering improved student learning and a culture of lifelong learning (Nkundabakura et al., 2024; Ngenzi et al., 2021). However, as (2024) observes, teacher training in Africa frequently encounters obstacles, such as program fragmentation and insufficient contextual relevance. Furthermore, in Rwanda, persistent challenges related to resource limitations, quality, and equitable outcomes underscore the complexity of post-conflict educational

transformation. Notwithstanding, these reforms represent a substantial accomplishment, exemplifying the nation's dedication to strengthening its educational infrastructure and laying the foundation for future achievements.

#### **4.8. Focus on Inclusive and Holistic Education**

Rwanda's dedication to inclusive education is reflected in its efforts to ensure learners with disabilities and other marginalized populations have fair access to high-quality education. Additionally, the national curriculum fosters national identity and social cohesion by highlighting values of peace, unity, and patriotism (Ministry of Education, 2020). In addition to access, holistic education broadens learning beyond academic success to include students' social, cognitive, emotional, and ethical growth, allowing them to become well-rounded, accountable, and socially aware members of society. Regarding this, Hidayah et al. (2025) contend that an inclusive education strategy that combines academic learning with social interaction, emotional support, and cultural responsiveness is especially helpful in addressing learner diversity. This method promotes student engagement and involvement, particularly among students from diverse backgrounds and with varying talents, thereby strengthening the role of holistic education in creating inclusive and fair learning environments.

#### **4.9. Strengthened Higher Education, Research, and Internationalization**

Reflecting the government's aim to create a knowledge-based economy, Rwanda's higher education system has grown dramatically in the last ten years. For example, the founding of the University of Rwanda in 2013 led to the merger of several public institutions, thereby improving coordination, quality, and research capacity (Higher Education Council, 2023). As a result, the university has broadened its academic portfolio to include doctoral programs, serving a broad spectrum of academic and professional fields. In the meantime, Rwanda Polytechnic stays dedicated to offering specialized technical and vocational further education.

Moreover, globalization has become a key element of higher education policy (Kapfudzaruwa, 2025). While Rwanda is also attracting regional and international students, Rwandan pupils are increasingly pursuing their education abroad. Improvements in educational quality, governance, and the use of English as the language of instruction can explain this phenomenon (World Education News Reviewers, 2019). As a result, postgraduate-level programs and research projects prepare highly educated people, promote entrepreneurship, and advance technological and scientific innovation. These changes show Rwanda's strategic role as a developing center of higher education in East Africa, as well as its conscious efforts to integrate into the global academic community.

#### **4.10. Teaching the Genocide and National Identity**

Following the 1994 Genocide against the Tutsi, Rwanda's educational system saw significant curricular changes meant to promote reconciliation, unity, and peacebuilding. As a result, Genocide education was added to the national curriculum as a required part to encourage collective memory, civic duty, and moral rebuilding by the educational system. Furthermore, this element seeks to foster a unified national identity that transcends ethnic lines (World Education News Reviewers, 2019; Basabose & Habyarimana, 2019). Some historians and teachers, however, have claimed that the curriculum tends to simplify or underrepresent the complexity of ethnic and historical realities. This continuous discussion emphasizes the fine line between education as a tool for nation-building and as a space for weighty introspection into Rwanda's history.

Finally, Rwanda's education system has made great strides in terms of inclusiveness, relevance, quality, and access. The country's dedication to developing educated, competent, and socially responsible citizens is evident in programs such as universal basic education, competence-based learning, gender equality, ICT integration, multilingualism, teacher development, inclusive education, and strengthened higher education. Taken together, these achievements support Rwanda's vision of a society grounded in inclusivity, knowledge, and creativity.

### **5. Socioeconomic Impacts of Education Reforms in Rwanda**

Rwanda has seen significant socioeconomic benefits from educational reforms. Studies on the programme have revealed improvements in literacy, job opportunities, and entrepreneurialism, hence aiding human capital development and poverty alleviation (Ministry of Education, 2023). A significant

development in this respect has been the introduction of the Competence-Based Curriculum (CBC), which has helped align education with labor market demands, thereby ensuring that students gain skills directly pertinent to national development objectives. Furthermore, including civic and peace education in the curriculum has been shown to encourage social cohesion, increase awareness of human rights, and deter future conflicts (Basabose & Habyarimana, 2019). The findings of this study show that Rwanda's educational reforms go beyond intellectual gains and constitute a more comprehensive plan for nation-building. The goal of this plan was to bring about sustained socioeconomic change and unity.

## **6. Current Ongoing Challenges in Rwanda's Education System**

Rwanda has made notable strides in improving educational access, almost reaching universal primary school enrollment, and encouraging gender equality in elementary education. Even with these improvements, many factors make it hard for the education system to be good, accessible, and effective. These include a few qualified professors at colleges, inadequate government funding, low literacy rates, and too few graduate-level courses. Together, these elements limit Rwanda's ability to develop a research-capable, highly talented workforce.

### **6. 1. Low Literacy Rates**

Enrollment in primary and secondary schools in Rwanda has increased significantly, but adult literacy remains a serious problem. With significant differences by gender and geography, literacy rates among adults were around 76% in 2023. The literacy rate is significantly higher in metropolitan areas, such as Kigali City (91%), than in rural areas, such as the Southern Province (72%). There are still gender disparities, with literacy rates for women and men estimated at 74% and 78%, respectively (National Institute of Statistics of Rwanda (NISR), 2024). These discrepancies demonstrate that having access to education alone is insufficient to achieve practical literacy outcomes. In support of this idea, Mtika & Abbott (2025) contend that poor adult literacy has a detrimental impact on a person's quality of life by restricting their capacity to participate in society, engage socially, and lead a healthy life overall. As a result, to enhance functional literacy and foster inclusive socioeconomic progress, especially in rural regions, Rwanda must complement enrollment growth with targeted adult literacy and quality-focused interventions.

### **6. 2. Shortage of Qualified Higher Education Academic Staff**

Rwanda's higher education system faces a severe shortage of competent instructors and literacy problems. A considerable share of the faculty does not hold doctoral degrees, therefore hurting both research capability and the standard of instruction. Particularly acute in crucial disciplines like STEM (Science, Technology, Engineering, and Mathematics) (ESSA, 2024), this shortage means that graduates may lack the advanced skills needed to meet labor-market demands, and that institutions struggle to become centers of innovation and information creation. It is therefore necessary to address faculty shortages if the quality and relevance of higher education are to be raised.

### **6. 3. Budget Constraints Affecting the Education Sector**

Moreover, financial restrictions exacerbate these difficulties. Government spending on education has fluctuated; in 2023, 4.92% of GDP was allocated, a slight rise from 4.75% in 2022, but still below the 5.59% peak in 2021 (The Global Economy, 2024). These limits influence teacher preparation, the accessibility of learning materials, the growth of higher education programs, and the building of infrastructure. As a result, important projects are slowed by limited resources, even when policies change, which creates differences in the quality and accessibility of education across the country.

### **6. 4. Limited Graduate-Level Programs**

The graduate education system in Rwanda is primitive. Despite the establishment of PhD programs at the University of Rwanda in 2014, enrollment is still relatively low, and the number of specialized programs is limited (SANGWA et al., 2025). This restricts the country's ability to develop highly qualified people capable of driving innovation and socioeconomic growth, as well as research competence. Establishing a knowledge-based economy and improving Rwanda's global competitiveness, therefore, depends on expanding graduate programs and promoting access to advanced degrees.

## 7. Recommendations for Rwanda's Education System

Maintaining the quality of education amid growing enrolment remains a top concern for Rwanda. Given the growing student numbers, it is crucial to ensure that learning resources, classroom sizes, and infrastructure keep pace with the rising demand. To protect learning outcomes, regular quality checks, ongoing curriculum reviews, and changes in teaching approaches are required (World Education News Reviewers, 2019). At the same time, it is vital to improve the quality of teacher training and the resources available to them. Strategies recommended as essential for equipping teachers with contemporary skills and methods include expanding pre-service and in-service programs, integrating ICT into instruction, and offering ongoing professional development. Better equipped to provide more effective instruction and support to varied learners, teachers should benefit from the execution of these policies (Ministry of Education, 2023).

Moreover, strengthening the link between education and the labor market is critical to Rwanda's socioeconomic growth. Particularly in TVET and tertiary education, syllabuses must match the needs of the economy. To provide students with practical experience, schools and colleges should encourage apprenticeships, internships, and collaborations with local businesses (Rwanda Education Board, 2020). As applied research, entrepreneurship, and continuing education possibilities enable students to satisfy the needs of a knowledge-based economy and develop national innovation capacity, promoting research, innovation, and lifelong learning is just as crucial.

Ultimately, integrating ICT and digital literacy across all educational levels will enhance global competitiveness while preserving cultural heritage, ensuring that Rwandan values and traditions remain integral to learning. Policies should be created to ensure fair access while accounting for gender, urban-rural, and socioeconomic differences. Scholarships, school feeding initiatives, and support to underprivileged groups can all help to accomplish this. Improved multilingual education in Kiswahili, English, French, and local languages will help strengthen regional integration and global engagement, thereby mirroring a holistic strategy that honors Rwanda's educational heritage while preparing pupils for the future.

## 8. Conclusion

Rwanda's educational system has undergone a substantial transformation, transitioning from informal, community-based learning methodologies to a formal, competency-oriented framework that fosters national development and social transformation. Specifically, the post-genocide reconstruction, post-independence reforms, and colonial legacies have contributed to the formation of a society that prioritizes inclusivity, justice, and practical competencies. Furthermore, significant initiatives such as the Competence-Based Curriculum (CBC), the Nine-Year Basic Education (9YBE), the expansion of Technical and Vocational Education and Training (TVET), and the modernization of language policy have established education as a fundamental element in the development of a knowledge-based economy. Collectively, these reforms aim to equip students with relevant skills, foster innovation, and strengthen Rwanda's integration into regional and global communities. Nevertheless, challenges persist, including inadequate infrastructure, limited teacher capacity, and disparities in access between urban and rural regions. Consequently, enhancing the relevance and quality of education necessitates sustained investment in teacher professional development, the integration of information and communication technology (ICT), and public-private sector partnerships. By emphasizing inclusive and skills-based learning, Rwanda can continue to use education as a foundation for national unity, social cohesion, and sustainable economic development. In essence, the efficacy of an education system depends on its ability to foster autonomy among its constituents, thereby enabling them to make meaningful contributions to a society predicated on knowledge. Consequently, the nation's long-term prosperity depends on the robustness and forward-looking nature of its educational framework.

## Conflict of Interest

The authors declare no conflict of interest.

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