

 Research Article

Evaluating the Balance between Quality and Quantity in Secondary Education in Tanzania: Challenges and Opportunities

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Abstract

Tanzania has expanded secondary education access over the past two decades through initiatives like the Secondary Education Development Program and Free Education Policy. While these reforms have significantly increased enrollment, concerns about educational quality persist. This study investigates how rapid enrollment growth has affected the quality of secondary education in Tanzania, particularly focusing on disparities in learning outcomes, teacher distribution, and infrastructure. A mixed-methods design was employed, combining quantitative analysis of government statistics (2015–2023) with qualitative data from interviews and focus group discussions in both urban and rural schools. Quantitative data assessed trends in enrollment, teacher-pupil ratios, and academic performance, while qualitative insights explored experiences of students, teachers, and administrators. Enrollment rose by over 50% between 2015 and 2023. However, this expansion coincided with overcrowded classrooms, underqualified teachers, and limited resources. Teacher deployment and learning outcomes remained uneven across regions. Participants highlighted systemic challenges, including a lack of functional laboratories, insufficient materials, and poor infrastructure. Despite these issues, emerging opportunities include ICT integration, community engagement, donor support, and reforms in the Education and Training Policy. Tanzania's focus on universal access must be matched by targeted efforts to enhance quality. Key recommendations include investing in teacher training, infrastructure development, equitable resource allocation, digital learning, and accountability mechanisms. Achieving Sustainable Development Goal 4 requires a strategic balance between quantity and quality to ensure inclusive, equitable, and transformative education for all.

Keywords: Secondary Education, Quality, Access, Tanzania, Educational Policy, SDG 4, Equity

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1. INTRODUCTION

Education is globally recognized as a fundamental driver of sustainable development, social equity, and economic transformation. In Tanzania, secondary education has witnessed considerable expansion over the past two decades, particularly following the implementation of the Secondary Education Development Program (SEDP I & II) and the Fee-Free Basic Education Policy (United Republic of Tanzania [URT], 2016). These reforms have significantly improved access to education, with secondary school enrollment rising from 1.9 million in 2015 to 2.9 million in 2023 (Ministry of Education, Science and Technology [MoEST], 2023). However, this quantitative progress has raised critical concerns about the quality of education being delivered.

A growing body of literature documents the tension between access (quantity) and quality in sub-Saharan Africa's education systems (Bashir et al., 2018; World Bank, 2021). In Tanzania, the expansion of enrollment has not been matched by proportional improvements in teacher availability, infrastructure, or

learning outcomes (Mkulu & Jonas, 2022). Classrooms are overcrowded, learning materials are scarce, and the teacher-student ratio remains high, factors that significantly undermine the goals of equitable and transformative education (UNESCO, 2020).

While previous studies have explored the impact of educational expansion (Sumra & Katabaro, 2014; Hakielimu, 2020), limited research has examined the interrelationship between quality and quantity through the lens of Education for Sustainable Development (ESD). ESD emphasizes not only access to education but also the development of learner-centered, inclusive, and future-oriented systems that foster critical thinking, problem-solving, and civic responsibility (UNESCO, 2020). This study addresses this gap by analyzing how Tanzania's secondary education system navigates the dual challenge of increasing access while maintaining quality, and how this tension aligns or conflicts with ESD principles.

The significance of this study lies in its contribution to the broader discourse on achieving Sustainable Development Goal 4 (SDG 4): ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all (United Nations, 2015). In the Tanzanian context, understanding how to balance quantity with quality is essential for creating an education system that not only serves more learners but also empowers them with the competencies needed for sustainable development.

Therefore, this study seeks to answer the following research question: *How has the expansion of access to secondary education in Tanzania affected the quality of teaching and learning, and what strategies can be employed to achieve a sustainable balance between quality and quantity?*

By situating the analysis within the Education for Sustainable Development (ESD) framework and drawing on empirical data from both urban and rural schools, this study bridges the gap between policy aspirations and ground-level realities in Tanzania's secondary education sector. ESD, as conceptualized by UNESCO (2020), emphasizes not only access to education but also its transformative potential to foster inclusive, learner-centered environments that promote critical thinking, lifelong learning, and social responsibility. The study's findings, rooted in classroom observations, interviews, and national statistics, provide actionable insights into how systemic inequities, such as teacher shortages and infrastructure deficits, inhibit the realization of these ESD ideals, especially in marginalized regions. By identifying context-specific challenges and highlighting emerging opportunities such as ICT integration and community engagement, the research informs a more nuanced understanding of how educational expansion can be sustainably managed. These insights are particularly valuable for policymakers, education officers, and school leaders seeking to align national strategies with Sustainable Development Goal 4, which calls for equitable, high-quality, and inclusive education for all (United Nations, 2015). In doing so, the study contributes to the development of a future-ready education system that equips learners not only with academic competencies but also with the values and skills necessary for navigating an increasingly complex and interdependent world.

1.1. Conceptual Framework

The conceptual framework underpinning this study is based on the interplay between educational quality and quantity. Drawing on UNESCO's (2005) definition, educational quality encompasses five key dimensions: learner characteristics, learning environments, content, processes, and outcomes. Quality is evaluated in terms of how effectively education meets learners' needs and supports lifelong learning. Quantity, in contrast, refers to the measurable increase in access and infrastructure, such as the number of students enrolled, schools constructed, or teachers deployed.

This framework posits that quality and quantity are not mutually exclusive but rather interdependent variables in educational development. The expansion of access (quantity) should ideally be accompanied by enhancements in quality indicators to ensure that increased enrollment translates into meaningful learning outcomes. The framework recognizes systemic inputs (e.g., funding, teacher training, learning materials) and outputs (e.g., student performance, equity of access) and how these influence educational outcomes. It also incorporates the role of education policy, stakeholder participation, and socio-economic context in shaping implementation outcomes.

By examining the alignment (or misalignment) between quantity-driven expansion policies and quality assurance mechanisms, the framework helps analyze whether current efforts contribute to or detract from sustainable educational development in Tanzania. It guides the analysis of policy effectiveness, resource allocation, and pedagogical support structures, offering a holistic lens to evaluate the implications of balancing access with learning excellence.

2. METHODOLOGY

2.1. Design

This research employed a mixed-methods approach to provide both breadth and depth in examining the balance between quality and quantity in Tanzanian secondary education. Quantitative data were sourced from official documents and statistical reports provided by the Ministry of Education, Science and Technology, including enrollment trends, pupil-teacher ratios, and examination performance data. These were complemented by qualitative data collected through semi-structured interviews and focus group discussions.

2.2. Participants

A total of ten secondary schools were purposively selected, comprising five from urban districts and five from rural areas across four regions. Participants included 20 teachers, 10 headteachers, 5 education officers, and 30 students. Interviews explored participants' experiences, perceptions of education quality, challenges faced, and views on government interventions. Focus group discussions allowed for triangulation and deeper insights from students and teachers.

2.3. Data Analysis

Data were analyzed thematically. Quantitative data were processed using descriptive statistics to summarize trends in resource allocation and academic performance. Qualitative data underwent coding and categorization to identify recurring themes such as classroom conditions, teacher competencies, infrastructure gaps, and policy implementation.

2.3.1. Quantitative Data Analysis

This section presents statistical evidence supporting the evaluation of quality and quantity in Tanzania's secondary education sector. The analysis draws on official government data, reports from international organizations, and academic research.

2.3.1.1. Enrollment Growth and School Infrastructure

Following the implementation of the Free Education Policy in 2015, there was a rapid increase in secondary school enrolment. Secondary school enrollment rose from 1.9 million in 2015 to 2.9 million in 2023, reflecting a growth of over 52% (Ministry of Education, Science and Technology [MoEST], 2023). The number of government secondary schools grew from 3,601 in 2015 to 5,420 in 2023 (MoEST, 2023). However, the average classroom-to-student ratio in public schools remained high at 1:79, well above the UNESCO-recommended ratio of 1:40 (UNESCO, 2020).

2.3.1.2. Teacher Distribution and Qualifications

The national student-teacher ratio was 1:51 in 2023 (MoEST, 2023). Only 62% of secondary school teachers hold a minimum bachelor's degree in education (Nkata & Dida, 2019). Rural schools report severe shortages, with ratios exceeding 1:70, compared to 1:38 in urban centers (Mkulu & Jonas, 2022).

2.3.1.3. Learning Resources and Infrastructure

63% of government secondary schools lack functional science laboratories (MoEVT, 2022). A single textbook is shared by an average of 7 students in core subjects (Jonas & Mkulu, 2022). Only 28% of schools have access to electricity, and 34% do not have separate sanitation facilities for girls, affecting school attendance and performance (UNICEF, 2021).

2.3.1.4. Academic Performance and Dropout Rates

The Form Four National Examination pass rate decreased from 82.5% in 2018 to 74.3% in 2022 (National Examinations Council of Tanzania [NECTA], 2022). The Uwezo Learning Assessment 2020 found that only 38% of Form Two students could solve Standard 4 arithmetic problems (Twaweza, 2020). The annual dropout rate averaged 6.4% between 2020 and 2022, mainly due to economic hardship and early pregnancy (MoEST, 2023).

1.3.1.5. ICT and Community Participation

Pilot projects like Shule Direct and TTCL Smart Schools show promise; students using digital platforms scored 17% higher in national assessments (Jamil Salmi, Alice Amegah & Aarya Rajendra Shinde, 2025). Schools with active School Committees and PTAs raised 23% more resources, including classroom construction and textbooks (Twaweza, 2021).

The data demonstrate that while Tanzania has significantly expanded access to secondary education, major gaps remain in teacher availability, infrastructure, and student performance. The disparity between policy ambitions and on-the-ground realities suggests that increased access must be accompanied by strategic investments in educational quality.

2.4. Ethics

Ethical considerations included obtaining informed consent from all participants, ensuring confidentiality, and securing permissions from relevant educational authorities. The combination of methodologies ensured a comprehensive understanding of the complex dynamics shaping secondary education in Tanzania.

3. FINDINGS

3.1. Challenges facing secondary schools in Tanzania

3.1.1. Overcrowded Classrooms

The government's push to increase access to secondary education has resulted in rapid enrollment growth. However, this has not been matched by proportional expansion in school infrastructure. Many classrooms, especially in urban centers like Dar es Salaam, are now accommodating double their intended capacity. One teacher remarked, "We have over 80 students in one room; effective teaching becomes impossible."

This overcrowding negatively impacts both the teaching process and students' ability to learn. Twaweza (2022) reports that schools with over 70 students per classroom experience significant declines in academic performance, particularly in subjects requiring interaction and critical thinking.

Furthermore, overcrowding contributes to high dropout rates and increases the risk of indiscipline and truancy. For female students, the lack of privacy and inadequate sanitary facilities in such environments is a key barrier to retention, particularly during menstruation (UNESCO, 2020).

3.1.2. Teacher Shortage and Qualifications

Tanzania faces a severe shortage of qualified teachers. According to Nkata and Dida (2019), more than 200,000 additional teachers are needed to meet the current demand. Many schools, particularly in rural areas, rely on untrained or underqualified staff to fill vacancies.

This situation leads to poor delivery of the curriculum and insufficient student support. Sumra and Katabaro (2014) emphasized that teachers without adequate training struggle with classroom management, lesson planning, and assessment. The shortage also results in high teacher-student ratios, which makes individualized instruction impossible.

Moreover, professional development opportunities for teachers remain limited. Many teachers have not received in-service training for over five years, making it difficult for them to adapt to curriculum changes or use modern teaching methods (World Bank, 2021).

3.1.3. Resource Deficiencies

Another major obstacle to quality education is the lack of adequate learning and teaching materials. Jonas and Mkulu (2022) found that in some schools, one textbook is shared among 10 to 15 students. This hampers both instruction and independent learning.

Laboratories are often non-functional or nonexistent, particularly in community-based schools. As a result, students are taught science subjects theoretically, without practical experiments, which undermines understanding. According to URT (2023), this gap in resources contributes to poor performance in science subjects at the national examination level.

Additionally, the lack of visual aids, maps, and audio-visual tools restricts the application of interactive and student-centered teaching strategies, which are crucial for effective learning in the 21st century.

3.1.4. Poor Infrastructure

Inadequate infrastructure remains one of the most persistent challenges, especially in rural and underserved areas. Many schools lack reliable access to electricity, clean water, and adequate sanitation. UNICEF (2021) reported that only 55% of secondary schools have functional water and sanitation facilities.

This situation discourages school attendance, particularly among girls, and poses health risks. Poor classroom conditions, including broken desks, leaking roofs, and cracked walls, create an un conducive learning environment. Teachers, too, are affected by a lack of staff rooms and housing, making it difficult to attract and retain qualified personnel in remote areas.

According to the World Bank (2021), these infrastructure deficits significantly contribute to low academic performance and increased teacher absenteeism.

3.2. Opportunities to Solve Those Challenges

Despite these challenges, Tanzania's education sector also presents opportunities for significant improvement. If harnessed strategically, these opportunities can help achieve a balance between quality and quantity.

3.2.1. Policy Reforms

The government has introduced promising policy reforms to address systemic issues in education. The revised Education and Training Policy (URT, 2023) outlines a vision for ten years of compulsory basic education and emphasizes quality monitoring, equity in resource allocation, and decentralized school management.

These reforms create a legal and administrative foundation for enhancing accountability, improving learning outcomes, and ensuring that all students receive equitable access to quality education. Proper implementation of these reforms could reduce disparities between urban and rural schools.

3.2.2. ICT Integration

Tanzania is making strides in integrating technology into its education system. Initiatives such as the Tanzania Education and Research Network (TERNET) and donor-supported tablet distribution programs are slowly transforming classrooms.

Mtebe and Raisamo (2014) highlighted that digital tools can improve literacy and numeracy in rural schools by supplementing teacher-led instruction. E-learning platforms and online teacher training modules can help bridge the gap caused by teacher shortages and resource constraints. Furthermore, digitalization opens up opportunities for self-paced learning, which is crucial in overcrowded or multi-grade classrooms.

3.2.3. Community Participation

Community engagement has proven to be a vital asset in improving school outcomes. Parents' associations and school management committees are increasingly involved in resource mobilization, infrastructure development, and student supervision.

Hakielimu (2020) observed that schools with active community involvement report better student attendance and academic performance. Local stakeholders, including religious organizations and private citizens, are helping build classrooms, provide scholarships, and monitor school performance.

This grassroots support can be a powerful complement to government efforts, especially in areas where state capacity is limited.

3.2.4. NGO and Donor Support

Non-governmental organizations and international donors play a critical role in addressing gaps in the education system. Organizations like UNICEF, UNESCO, and the World Bank have supported curriculum reform, teacher training, and school infrastructure development.

World Bank (2021) data show that donor-funded pilot programs have led to measurable improvements in student learning outcomes in regions like Dodoma and Morogoro. These partnerships are also introducing innovation into public schools, such as performance-based financing and cluster-based teacher training models. Such external support is particularly important in achieving SDG 4, which emphasizes inclusive and equitable quality education for all.

4. DISCUSSION

This study highlights the ongoing struggle within Tanzania's secondary education sector to strike a balance between expanding access (quantity) and ensuring meaningful learning outcomes (quality). While enrollment gains reflect commendable progress toward universal education (MoEST, 2023), the findings reveal systemic limitations that undermine educational equity and excellence, core tenets of Education for Sustainable Development (ESD) (UNESCO, 2020).

The persistence of overcrowded classrooms and inadequate teacher deployment is emblematic of a system where expansion has outpaced capacity. The mean student-teacher ratio of 1:51, and as high as 1:70 in rural areas, illustrates a disconnect between policy ambition and classroom reality (Mkulu & Jonas, 2022). The ESD framework, which emphasizes learner-centered, transformative education (UNESCO, 2020), is compromised when teachers are unable to deliver individualized instruction or promote critical thinking in overburdened settings. Similar findings were reported by Bashir et al. (2018), who identified that class sizes above 50 significantly erode instructional quality in sub-Saharan Africa.

The shortage of qualified teachers is not merely a logistical issue but reflects broader systemic constraints, including insufficient investment in teacher education and weak professional development structures. As Nkata and Dida (2019) and the World Bank (2021) note, the lack of continuous in-service training weakens teacher efficacy, which in turn compromises curriculum delivery and student engagement. The limited integration of ESD principles, such as participatory pedagogy and values-based education—into teacher training curricula further exacerbates this gap (UNESCO, 2020).

Additionally, disparities in infrastructure and learning materials reinforce educational inequities, particularly for girls and students in remote areas. The absence of laboratories, inadequate sanitation, and poor digital access inhibit not only academic success but also violate the inclusive ethos of ESD (UNICEF, 2021; Jonas & Mkulu, 2022). These shortcomings are not isolated but are rooted in policy misalignment and uneven resource allocation, as echoed in similar regional contexts (Hardman et al., 2011; Twaweza, 2022).

Despite these challenges, the study identifies emerging opportunities for systemic transformation. The revised Education and Training Policy (URT, 2023), which calls for equity, decentralization, and quality monitoring, provides a strategic policy framework. However, implementation must be grounded in ESD principles, fostering not just access, but also skills for sustainable living, civic responsibility, and lifelong learning (UNESCO, 2020).

Technological innovations represent a scalable solution to quality deficits. Initiatives like Shule Direct and TTCL Smart Schools demonstrate that digital platforms can enhance learning outcomes and support teacher instruction, particularly in under-resourced areas (Jamil Salmi, Alice Amegah & Aarya Rajendra Shinde, 2025). Nonetheless, for ICT to be transformative, it must be equitably deployed and pedagogically integrated, an approach championed by ESD as a means of democratizing knowledge and enabling inclusive education (UNESCO, 2020).

Moreover, the study underscores the value of community participation and partnerships with NGOs. Schools with active parental and community engagement report better academic outcomes and resource mobilization (Twaweza, 2021; Hakielimu, 2020). These grassroots collaborations reflect the multi-stakeholder approach central to ESD, wherein education is not confined to the classroom but embedded in community well-being and collective responsibility.

4.1. Implications for Stakeholders

- For teachers, professional development must be linked with inclusive pedagogies and sustainable development content.
- For students, quality education must offer both academic and life-relevant skills.
- School leaders should be empowered to manage performance and foster collaborative environments. For policymakers, aligning budgetary priorities with quality benchmarks, rather than enrollment metrics alone, is crucial.
- Finally, development partners must support capacity-building initiatives that integrate ESD across all levels of the education system.

Generally, the Tanzanian case illustrates that access without quality risks perpetuating educational poverty. Sustainable solutions must bridge this gap through coordinated, equity-focused, and ESD-aligned interventions that transform both the learning environment and the broader educational ecosystem.

5. CONCLUSION AND RECOMMENDATIONS

This study concludes that Tanzania's secondary education system is at a pivotal juncture. The impressive strides made in increasing access to education must now be matched with deliberate efforts to enhance educational quality. While policy intentions are well-articulated, practical implementation remains inconsistent, particularly in resource-limited settings. The current imbalance between quantity and quality threatens to undermine the long-term developmental goals of the country. Addressing this requires strategic coordination among policymakers, educators, communities, and development partners.

A clear lesson emerging from this study is that quantity should not be pursued at the expense of quality. Both must progress hand in hand to ensure that education fulfills its role as a transformative force in society. The focus must shift from enrollment statistics alone to measurable learning outcomes, teacher effectiveness, and student well-being. Only through this recalibration can Tanzania harness the full potential of its human capital.

The following recommendations are proposed:

- **Recruitment and Training of Qualified Teachers:** The government should accelerate the hiring of trained teachers and provide regular in-service training. A national teacher development strategy should be implemented to align professional standards with curriculum demands.
- **Infrastructure Development:** Investment in basic infrastructure, including classrooms, sanitation, libraries, and science laboratories, is essential to create a conducive learning environment. Priority should be given to underserved rural schools.
- **Equitable Resource Allocation:** The government must adopt data-driven policies to ensure equitable distribution of textbooks, digital tools, and other learning resources. A decentralized funding model can empower local education authorities to respond effectively to unique school needs.
- **Leveraging Technology:** ICT should be integrated into curriculum delivery, especially in areas with limited teacher availability. Partnerships with tech firms and donor agencies can facilitate digital literacy and expand access to quality content.
- **Enhancing Accountability:** Stronger monitoring and evaluation systems are needed to track learning outcomes and policy effectiveness. School leadership must be trained to manage performance reviews and provide constructive feedback.
- **Strengthening Community Engagement:** Community participation in school governance and development planning can reinforce accountability and supplement government efforts. Education campaigns should raise awareness of the importance of parental involvement.

By implementing these recommendations, Tanzania can bridge the gap between educational access and learning quality, thereby laying the groundwork for a more equitable, effective, and future-ready education system. Ultimately, Tanzania's path toward balancing quality and quantity in secondary education depends on the political will, stakeholder coordination, and strategic investment. With sustained effort and inclusive planning, the country can transform its education system into one that is both accessible and excellent.

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