The Effects of Teacher Deployment Policy on Curriculum Implementation in Tanzania: A Case Study of Selected Public Secondary Schools in a Rural District

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Abstract

This study investigated the implementation of secondary school teachers' deployment policy, focusing on its effects on curriculum implementation using Selected Rural District experiences. The study aimed to examine the situation and effects of teacher deployment in public secondary schools in a Selected Rural District. Guided by Labour Demand and Supply Theory, the study utilised a qualitative approach and a multiple case study design. Data were collected through face-to-face semi-structured interviews, focus group discussions, and document reviews. Thematic analysis revealed insufficient teacher supply and adverse effects on curriculum implementation, including poor student performance, poor teacher preparations, heavy workloads, minimal classroom engagement, and reliance on lecturing. The recommendations emphasise the need for the government to establish clear policies, guidelines, and strategies for equitable teacher deployment, especially in challenging areas.

Keywords: *teacher deployment, policy, teacher recruitment, effects, secondary schools*

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Introduction

Developing countries, including Tanzania, have invested heavily in education to expand the teaching workforce in response to rising student enrolments. Teachers play a crucial role in student's academic achievements, personal growth, and future opportunities (Crawfurd & Pugatch, 2020). Beyond instruction, they provide mentorship, foster social development, and engage with the community (Ozcan, 2021). Effective teaching practices, including the ability to convey complex concepts and adapt to diverse learning needs, are essential for student success (Darling-Hammond et al., 2023). Additionally, teachers facilitate social skill development, encourage teamwork, and strengthen school culture through extracurricular activities and parental collaboration (Eden et al., 2024). Continuous professional development ensures they remain updated with evolving educational methodologies and technologies, maintaining high-quality education (World Bank, 2019).

Equitable teacher distribution is critical for educational quality, balanced workloads, and societal benefits (UNESCO, 2020). Ensuring all students, regardless of location, have access to qualified teachers reduces disparities in educational opportunities (OECD, 2018). Overcrowded classrooms hinder personalised instruction, negatively impacting student outcomes (World Bank, 2019). Equitable deployment also prevents teacher burnout, promotes job satisfaction, and enhances retention (UNESCO, 2020). Balanced distribution facilitates professional development, benefiting under-resourced areas and improving overall teacher effectiveness (World Bank, 2019). Equitable deployment is key to achieving SDG 4, which promotes inclusive and high-quality education (United Nations, 2018).

Despite these goals, Tanzania struggles with uneven teacher deployment. Urban areas have better teacher availability, which has exacerbated shortages in rural regions (UNESCO, 2016). Since independence, Tanzania has implemented policies to promote equitable teacher distribution, particularly through education expansion and teacher training (Boniface, 2016). However, early efforts were centralised, prioritising urban areas and neglecting rural schools, thereby limiting educational outcomes in underserved regions (UNESCO, 2023). Addressing these disparities was crucial for ensuring sustainable and inclusive education development. Educational reforms in the late 1980s and 1990s, including decentralisation initiatives, sought to improve resource and teacher distribution by transferring decision-making authority to local governments and communities. These reforms aimed to better align educational services with local contexts, enhance community involvement, and promote greater accountability in addressing educational challenges (Mulengeki, 2017; Onyango, 2022). The 1995 Education and Training Policy delineated the teacher deployment policy as follows:

> It is not possible to ensure access and equity in education without at the same time ensuring the availability and equitable distribution of resources. Critical resources, in this regard, include teachers, teaching and learning materials, school equipment and other facilities, as well as adequate financial resources. Therefore, the government shall ensure that sufficient resources are made available and provided to enhance access and equity in education (MoEC, 1995, p.22).

The policy statement emphasises teachers' vital role in ensuring access and equity in education. It stresses that having enough teachers is insufficient; they must be equitably distributed to provide quality education for all students. Unequal distribution leads to educational disparities. The government is responsible for ensuring adequate teacher availability and resources. Addressing this issue requires a broader strategy, including proper teaching materials, school facilities, and financial support to enhance education access and equity.

The 1995 ETP also categorically stated, "The minimum qualification for a secondary school teacher in both government and non-government schools shall be a possession of valid diploma in education obtained from a recognised institution" (MoEC, 1995, p. 41). This policy aimed to enhance teacher quality and standardization but might have posed challenges related to teacher supply and accessibility, especially in disadvantaged areas. Its effective implementation required ongoing teacher training, incentives for higher qualifications, and measures to address potential teacher shortages.

By 2001, it was noted that there were more teachers in urban than rural schools:

> ...the problem of teacher overcrowding in urban schools has become chronic, causing a significant shortage in rural schools. This overcrowding is largely due to female teachers moving to urban areas to join their husbands, and some male teachers prefer to live in urban areas instead of rural ones. In urban schools, there are schools with more teachers than the actual needs according to the required staff ratios. Similarly, there are urban schools with a severe shortage of teachers, where the few available teachers have a heavy teaching load, affecting their efficiency. The impact of this overcrowding on rural schools includes lower quality of education, poor student performance, and overall denial of the right to quality education for rural students, who are many as compared to urban students (MoEC, 2001, p.1).

The statement highlights teacher overcrowding in urban schools, while rural schools face a significant shortage of teachers. Moreover, there was inefficient teacher distribution in urban schools that required targeted policy interventions, including implementing more effective teacher allocation strategies to ensure a balanced distribution between urban and rural areas. Such interventions could have encouraged teachers to work in rural areas. Further, systems for regular monitoring and evaluation of teacher distribution and its impact on educational outcomes were required to ensure continuous improvement.

Significant policy reforms to improve teacher deployment came with the adoption of the Secondary Education Development Programme (SEDP) in 2004, as stated clearly:

> To facilitate the implementation of SEDP, the government has outlined the responsibilities of various stakeholders from the national, regional, district, and school levels. One of the responsibilities at the regional level is to coordinate the employment and transfer of teachers within the schools in their respective regions. In this process, regions will be required to identify the needs for secondary school teachers within

> their regions, considering the needs of each school, and submit these reports to the Ministry by March 31st of each year (MoEC, 2005. p.1).

The policy statement outlines a hierarchical structure for managing the SEDP, with clear responsibilities at national, regional, district, and school levels. It emphasises a systematic approach to teacher allocation, stating that new teachers would be allocated based on the needs and availability of graduate teachers at the national level, and regions would assign them to schools according to their specific needs. This approach aimed to ensure efficient distribution, address regional disparities, enhance local responsiveness, and promote transparency through data-driven decision-making, ultimately fostering a balanced and equitable educational system.

As for teacher transfers, the secondary school teacher deployment policy stated that:

> ...the transfer of teachers within a region will be managed by regions themselves, and the changes will be reported to the Ministry for accurate record-keeping of teacher staffing in each school. Teachers wishing to transfer from one region to another for valid reasons will be required to submit their applications to the Permanent Secretary of the Ministry of Education and Culture through their Regional Education Officers. (MoEC, 2005, p.1).

The statement indicates that regional education authorities had autonomy in managing teacher transfers within their jurisdiction, enabling localised and responsive decision-making. This decentralisation emphasised more efficient and contextually appropriate transfers. Regions were required to report all changes, ensuring the Ministry maintained oversight of teacher distribution. A formal application process for inter-regional transfers aimed to ensure validity while reporting requirements focused on accountability. Additionally, the structured transfer system would provide a clear pathway for teachers needing relocation for personal or professional reasons, balancing flexibility with oversight in teacher deployment and mobility.

Despite the above policy measures, teacher availability and distribution in secondary schools continued to deteriorate (MoEVT, 2009a, 2009b). As such, by 2009, the Commissioner for Education provided policy directives in relation to teacher employment and allocation:

> The government has transferred the management and administration of secondary schools from the Ministry of Education and Vocational Training (MoEVT) to the Office of the Prime Minister – Regional Administration and Local Government (PO-RALG). This decision aims to improve the delivery of education services by bringing these services closer to the citizens. MOEVT was previously responsible for recruiting and placing teachers and non-teaching staff directly from

> the headquarters to their respective workstations. With these reforms, existing procedures for recruiting and placing teachers and non-teaching staff are being changed. PO-RALG will now be responsible for seeking teachers' employment permits and putting them in various councils according to needs. Additionally, MOEVT will continue to coordinate and manage foreign employment. The responsibilities of the councils will be to assign schools and complete the employment process for teachers foreign experts, and to request employment permits for non-teaching staff and to hire them (MoEVT, 2009a, p.1).

This circular describes a significant shift in the management and administration of secondary schools in Tanzania, with responsibilities transitioning from the MoEVT to the PO-RALG. This restructuring transferred administrative duties to PO-RALG, which aimed at decentralising education service delivery by bringing them closer to the citizens. PO-RALG was empowered with teacher recruitment and placement, and Councils were made responsible for assigning teachers to schools, completing employment processes for teachers and foreign experts, and requesting employment permits for non-teaching staff.

Further, due to a serious shortage of teachers, in 2009, the government decided to employ graduates with degrees or diplomas other than education as stated:

> Due to the significant shortage of teachers, the Ministry has been compelled to hire university graduates who do not have teacher education qualifications. In dealing with the employment of this group, the MoEVT will have the following responsibilities: (i) To receive and study applications from graduates; (ii) To allocate these professionals to Councils according to the employment permit; (iii) To prepare a training guide for the Postgraduate Diploma in Education; and (iv) To assess these professionals who are teaching in secondary schools without teaching qualifications (MoEVT, 2009b, p.2).

This policy statement highlights the severe teacher shortage in the education sector, forcing MoEVT to hire university graduates without formal teacher training. Traditional recruitment methods failed to meet demand, particularly in rural areas. By 2014, challenges in teacher deployment persisted, with shortages, poor infrastructure, and limited professional development. The science and mathematics deficit was 26,998 teachers (55.8%), as only 21,409 out of 48,407 needed teachers were available (MoEVT, 2014, p. 47), emphasizing the crisis's urgency. It was further clarified that:

> The demand for teachers at various levels in the education and training sector has been increasing annually. This situation is an outcome of

> education sector expansion and the lack of incentives that would encourage various individuals to enter and remain in the teaching profession. Additionally, due to the expansion of other sectors in the country, some teachers have been leaving the teaching profession to join more attractive sectors in terms of benefits and working conditions. Consequently, there has been a high demand for teachers in various fields, especially in the teaching of mathematics, science, and languages (MoEVT, 2014, p. 46).

This implied that there were inefficiencies and bureaucratic hurdles in teacher training and allocation, which led to delays in the deployment of qualified teachers to areas with the greatest need (MoEVT, 2014). Thus, in order to alleviate teacher inadequacy, through the ETP 2014, it was planned that the government would "improve the quality of the employment system in the education and training sector to ensure it is tailored to meet the needs, availability, and management of human resources, fostering the development of the education and training sector." (MoEVT, 2014, p. 48).

Sustainable Development Goal (SDG) 4 emphasises education as a fundamental right for sustainable development, focusing on inclusion, equity, and lifelong learning. However, teacher deployment policies often fail, causing rural shortages and urban surpluses (World Bank, 2019). Tanzania's secondary school teachers dropped from 89,475 (2017) to 87,992 (2021), with 21,000 excess arts teachers but critical STEM shortages (Kwembe, 2018). Rising student enrolment worsens the student-teacher ratio, creating a 47% teacher deficit (Simtowe, 2022). Dodoma exemplifies these challenges, affecting education quality and equity. This study explores solutions for balanced teacher distribution and quality education in Tanzania.

Statement of the problem

For several decades, Tanzania's public secondary education has struggled with inequitable teacher deployment, presenting significant challenges to quality, access, and the equitable provision of education. This inequity arises from various factors leading to a disproportionate distribution of teachers among public secondary schools. In rural areas, the scarcity of qualified teachers restricts access to essential subjects like science and mathematics, limiting students' educational and career opportunities. Conversely, some urban schools experience a surplus of teachers, exacerbating the issue of inequitable distribution. This imbalance results in overcrowded classrooms, reduced student-teacher interaction, and teacher burnout, negatively impacting the quality of education, student performance, and overall school functioning. Given the persistence of these deployment inadequacies, it was crucial to explore and understand the effects on Tanzania's secondary education, with a specific focus on Selected Rural District. Investigating these deployment

challenges is essential for developing strategies to improve teacher distribution and educational outcomes.

Purpose and research questions

This study investigated the situation and effects of the implementation of the secondary school teacher deployment policy in Tanzania, with specific experience from public secondary schools in the selected Rural District. Specifically, the study sought to answer two questions:

i. What is the situation of teacher deployment in public secondary schools in a selected rural district of Dodoma Region?

ii. How does the implementation of teachers' deployment policy affect curriculum implementation in public secondary schools?

Literature Review and Theoretical Framework

Literature review

Understanding the teacher deployment policy implementation process

Teacher deployment policy is centred on the systematic allocation of teachers to schools, involving a series of steps such as recruitment, selection, posting, transfer, and assignment of teaching responsibilities, all governed by established policies and procedures (UNESCO, 2021). The process begins with recruitment, where schools actively seek qualified candidates. This stage typically involves advertising vacancies, receiving applications, and conducting initial screenings to attract a diverse pool of candidates with the necessary qualifications and skills to meet the school's educational needs (UNESCO, 2021). Following recruitment, the selection process assesses candidates' suitability for specific teaching positions through interviews, demonstrations, reference checks, and sometimes subject-specific knowledge or pedagogical skill assessments. The goal is to identify candidates who meet academic and professional standards while also aligning with the school's values and educational objectives (UNESCO, 2021). Once selected, teachers are formally posted to specific schools based on criteria such as subject expertise, educational qualifications, and institutional needs. Posting decisions may also consider teacher preferences, school vacancies, and geographical factors to ensure equitable distribution across different locations (UNESCO, 2021).

Teacher transfer involves moving educators from one school to another and can be initiated for personal reasons, professional development, or administrative decisions. Transfers require approval from relevant authorities and may involve negotiations between educators and school administrators (UNESCO, 2021).

Finally, after being posted or transferred, teachers are assigned specific teaching responsibilities. These assignments include determining their teaching load, the subjects or courses they will teach, and any additional duties, such as extracurricular activities or administrative roles, based on their qualifications, expertise, and the school's curriculum requirements (UNESCO, 2021). Each stage of this process is crucial in ensuring that schools have well-qualified and appropriately placed teachers, ultimately contributing to the overall success of educational institutions (UNESCO, 2021).

Factors influencing teachers' deployment policy implementation

The teacher deployment process plays a critical role in ensuring the quality and equity of education. Key factors influencing this process include policy frameworks, administrative practices, and socio-economic considerations (Kesuma et al., 2018). Effective deployment strategies aim to distribute qualified teachers equitably across schools, especially in underserved and rural areas. These policies often incorporate incentives for teachers in remote areas, targeted recruitment, and decentralised deployment decisions. However, the implementation of these policies is frequently challenged by bureaucratic inefficiencies, resource limitations, and resistance from stakeholders (Mulkeen et al., 2017). Administrative practices are central to the effectiveness of teacher deployment. The ability of educational authorities to manage and monitor this process directly impacts its success. Effective administration should involve transparent and fair criteria for teacher allocation, ongoing support, professional development, and mechanisms to address grievances. Robust data systems are also essential to track teacher placements and identify gaps. However, many developing countries face challenges due to inadequate administrative capacity and infrastructure, resulting in uneven teacher distribution (Kesuma et al., 2018).

Socio-economic factors also significantly influence teacher deployment. Teachers' personal and professional preferences, such as proximity to family, housing availability, and access to amenities, can affect their willingness to accept certain postings. This often leads to teachers' concentration in urban and peri-urban areas, exacerbating shortages in rural and marginalised regions. While some countries have introduced financial incentives, housing allowances, and career advancement opportunities to attract teachers to underserved areas, the effectiveness of these measures varies, and consistent application is necessary for sustained impact (Lutfiu & Lutfiu Hoxha, 2024). The complexity of the teacher deployment process lies at the intersection of policy, administration, and socio-economic factors. A comprehensive approach that integrates these elements is needed to create a more effective and equitable system. Aligning teacher deployment policies with broader educational goals, enhancing administrative capacity, and addressing socio-economic barriers is essential for success (UNESCO, 2016).

In Tanzania, national-level recruitment and deployment are managed by President's Office, Regional Administration and Local Government Tanzania (PO-RALG) in Dodoma, with local authorities empowered to transfer teachers as needed (PO-RALG, 2021a). Ensuring adequate and qualified teacher distribution, particularly in high-need areas, remains crucial. However, the deployment of higher-quality teachers is often influenced by technical decisions and political factors (Zakaria & Otieno, 2022). Challenges such as high teacher mobility, turnover, and subject-specific attrition rates exacerbate staffing disparities, particularly in remote and rural schools. Political interference and personal preferences further complicate equitable deployment practices. Addressing these challenges is vital for fair and effective teacher deployment, especially in rural districts (UNESCO, 2021; Mulkeen, 2015; Abdi, 2019).

Theoretical framework

This study employed a classical *Labour Demand and Supply Theory*, developed by Alfred Marshall and Adam Smith, to analyse how teacher deployment policy impacts curriculum implementation by examining the alignment between teacher availability, qualifications, and curriculum needs (Inoua & Smith, 2020; Kregel, 1988). Labour demand refers to the need for teachers driven by student enrolment and curriculum requirements. This demand is crucial as high enrolment coupled with insufficient teacher deployment can compromise curriculum delivery. The study also explored whether the curriculum demands specialised teachers or additional resources aligned with available teacher skills, such as advanced science subjects requiring appropriately qualified teachers (Inoua & Smith, 2020; Kregel, 1988).

Labour supply involves the availability of teachers, their qualifications, and their willingness to work in specific areas or schools. In the context of teacher deployment in the Selected Rural District, the study assessed whether there were enough qualified teachers available. Insufficient supply affects curriculum quality and implementation, particularly if teachers lack the necessary skills and subject expertise (Inoua & Smith, 2020; Kregel, 1988). Teacher deployment policy affects both labour supply and demand. The study examined how these policies influence the distribution of teachers, noting that disproportionate deployment to urban areas can lead to shortages in rural schools, negatively impacting curriculum delivery. Effective policies that align teacher deployment with curriculum needs help meet educational standards more effectively (Inoua & Smith, 2020). The study also focused on how the interplay between labour supply and demand directly influences curriculum implementation in terms of resource allocation and teacher morale. Proper allocation and matching of teachers to their roles enhance curriculum adherence and teacher effectiveness, ensuring comprehensive curriculum coverage and maintaining educational quality (Matete, 2016).

Methodology

This study was conducted in six (6) selected public secondary schools in a rural district of Dodoma Region, Tanzania. The district, which has 21 public secondary schools was chosen due to its rural status and persistent teacher shortages. Previous reports by Waziri (2018) and Majumba (2019) highlighted substantial challenges, such as uneven teacher distribution and shortages within the district, prompting the need for deeper exploration into the triggers and effects of these deployment practices. The six (6) schools were purposively chosen to represent diverse locations within the district, considering their distance from the district headquarters.

Using a case study design, with schools as units of analysis, the study engaged key stakeholders, including the District Secondary Education Officer (DSEO), District School Quality Assurance Officer (DSQAO), Statistic and Logistic Officer (SLO) for the secondary education department, Heads of Schools (HoS), and teachers. As noted in previous studies (see, for example, Pesambili, 2013; Pesambili & Mkumbo, 2018, 2024), a case study is particularly useful in providing an in-depth understanding of complex social phenomena within their real-life contexts, allowing for a detailed exploration of teacher deployment dynamics. Criterion purposive sampling was used to select 45 participants, ensuring representation from various roles relevant to teacher deployment practices. This included education officials, school heads, and teachers with diverse levels of experience and involvement in deployment processes.

Data collection involved face-to-face semi-structured interviews with key district officials and heads of schools, focusing on identifying triggers and understanding the impact of inequitable teacher deployment on teaching and learning processes in public secondary schools. The analysis of teachers' records and examination results also provided quantitative insights into newly recruited teachers and their placements within the selected rural district. Focus groups discussions (FGDs) with subject teachers further enriched the qualitative data, offering views on how inadequate teacher distribution affected their workloads and student outcomes.

Thematic analysis, guided by Braun and Clarke's (2021) six-stage model, was employed to analyse the collected data. This rigorous approach ensured that findings were grounded in verbatim quotations from participants, enhancing the credibility and trustworthiness of the study's conclusions (Cohen et al., 2018).

Ethical considerations were paramount throughout the research process. The study received approval from the University of Dar es Salaam's Vice Chancellor and obtained official permits from relevant regional and district administrative authorities. Measures to protect participant confidentiality included secure storage of physical and digital data, anonymisation of participant identities in transcripts, and informed consent procedures outlining participant rights and the study's protocols.

Study Findings and Discussion

The findings are presented and discussed in line with the two research objectives as follows:

The situation of teacher deployment in public secondary schools in a selected rural district

The research on teacher deployment in public secondary schools within the Selected Rural District reveals significant disparities due to inadequate supply, misallocation, and mobility issues. Among the sampled schools, two had a surplus of teachers in arts subjects, while four faced shortages, particularly in Mathematics, English, and sciences. The district-wide teacher shortage totalled 45, with localised deficits alongside surpluses, highlighting substantial imbalances, especially in Schools B and F.

In School B, a shortfall of 15 teachers was noted, including deficits in critical subjects such as English (2), Mathematics (4), Biology (3), Physics (3), and Chemistry (3). This shortage likely impairs students' academic performance and limits their opportunities in STEM fields. Despite these shortages, School B had an excess of five teachers in other subjects, including Geography (1), Kiswahili (1), and History (3), indicating inefficient resource allocation. Similarly, School F exhibited an oversupply of seven teachers in English (1), Geography (1), Kiswahili (3), and History (3) while facing deficits in Biology, Physics, and Chemistry. This imbalance underlines the need for a more strategic allocation of teaching staff to address subject-specific shortages.

These findings indicate substantial disparities in teacher distribution across subjects, emphasising the necessity for improved resource management. Shortages in key subjects like Mathematics and Sciences could negatively impact students' learning outcomes and interest in these fields. To address these disparities, school administrations and policymakers should consider reassigning surplus teachers to areas with deficits, recruiting additional teachers, and aligning staffing decisions with actual school needs. By addressing these imbalances, schools can optimise teacher-student ratios, improve educational quality, and ensure balanced and comprehensive instruction.

Table 1

Teachers' Deployment in Various Subjects in Schools B and F

Subject	School B				School F			
	Number of Teachers				Number of Teachers			
	Needed	Available	Shortage	Excess	Needed	Available	Shortage	Excess
English	7	5	2	0	6	7	0	1
Mathematics	6	2	4	0	5	2	3	0

Biology	6	3	3	0	6	4	2	0
Geography	4	5	0	1	4	5	0	1
Kiswahili	4	6	0	1	4	7	0	3
History	3	6	0	3	3	5	0	2
Civics	2	2	0	0	2	2	0	0
Physics	4	1	3	0	5	2	3	0
Chemistry	4	1	3	0	5	2	3	0
ICS	0	0	0	0	1	1	0	0
French	1	1	0	0	0	0	0	0
Bookkeeping	1	1	0	0	0	0	0	0
Commerce	1	1	0	0	0	0	0	0
Total	**43**	**34**	**15**	**5**	**41**	**37**	**11**	**7**

Source: Field data (2022)

ICS= Information and Computer Studies

The study also revealed inequitable teacher deployment beyond urban and rural distinctions, affecting schools with both high and low teacher-student ratios (TSR). Schools near town, like School F and School D, did not face teacher shortages. For example, School D, about 30 km from Dodoma city, and School A, two kilometres from the Selected Rural District town and headquarters, experienced fewer shortages. Additionally, urban schools (School B, School E, and School F) had more female teachers and students compared to rural schools (School A, School C, and School D).

Table 2

Teachers' Deployment in Selected Schools in Selected Rural Districts by March 2022

School	Forms	Number of Students			Number of Teachers			TSR	Needed
		Boys	Girls	Total	Male	Female	Total		
A	I –IV	202	236	438	08	02	10	1:44	14
B	I –IV	507	593	1,100	18	07	24	1:46	37
C	I –IV	222	266	488	10	03	13	1:38	15
D	I –IV	116	205	321	11	04	15	1:21	13
E	I –VI	353	349	702	12	11	23	1:31	30
F	I –IV	438	493	931	18	17	35	2:27	28

Source: Field Data, 2022.

The imbalance illustrated in Table 2 has the following effects on curriculum implementation, as presented below.

Effects of teachers' deployment policy on school curriculum implementation

The second research objective scrutinised the effects of teachers' deployment on curriculum implementation in public secondary schools. It was observed that inequitable teachers' deployment has detrimental effects as follows:

Poor preparation of teaching due to heavy teaching loads

We identified a lack of adequate preparation for pre – and post-teaching documents, including the creation and utilisation of lesson plans and teaching aids. Teachers in certain subjects neglected the preparation and use of teaching aids, lesson plans, and lesson notes, attributing this to their overloaded schedules with numerous teaching periods. Interviews with HoS in Schools A, B, and E mentioned conflicts with some teachers who resisted the insistence on preparation and utilisation of lesson plans, lesson notes, and teaching aids before the lessons. One teacher explained:

> Teaching is not merely about attending classes to impart knowledge; it also requires thorough preparation. Teachers must develop lesson plans and create teaching aids before entering the classroom. However, due to the shortage of teachers, the available staff have limited time for adequate preparation. As a result, we spend more time teaching than preparing lesson plans and instructional materials (*Teacher P in School D, March 14th 2022)*.

Teacher shortages lead to increased workloads, limiting preparation time and reducing lesson effectiveness. Without adequate planning, teachers struggle to integrate innovative methods, address learning difficulties, and maintain lesson coherence, impacting student engagement and retention. The excessive workload also contributes to stress and burnout, lowering job satisfaction and increasing absenteeism and turnover. Overworked teachers are less likely to pursue professional development, further affecting teaching quality. To sustain high education standards, it is crucial to manage workloads effectively, ensuring teachers have sufficient preparation time to deliver well-structured, engaging lessons while maintaining their well-being and professional growth.

On a similar matter, one Official contended that:

> During school quality assurance visits for monitoring teaching and learning, when teachers are asked why they have not prepared lesson plans or teaching aids daily, it is common to hear that heavy teaching loads are the main reason. The culture of preparing and using lesson plans, teaching aids, and other essential documents diminishes in subjects or schools with a serious shortage of teachers *(Interview with Official, March 24th 2022)*.

This Official explains the challenges associated with teacher workload and its impact on lesson preparation and the overall quality of teaching and learning. Heavy teaching loads are a significant barrier to effective lesson preparation. Teachers frequently cite this as the primary reason for not preparing lesson plans or teaching aids daily. Quality assurance processes aim to ensure that educational standards are met, but the consistent feedback regarding heavy workloads highlights a structural problem within the education system.

Proper lesson planning is essential for effective teaching, specifying what, when, where, and how students should learn (Moradi, 2019). The shortage of teachers increases the teaching burden on existing staff, compromising their effectiveness and creativity and causing severe fatigue. For example, some teachers had more than 50 periods per week in School E and 12 periods per week in School F, with Mathematics and science teachers being particularly overwhelmed. One participant expressed this concern, stating:

> My two Mathematics teachers are overloaded with periods as they are forced to teach two classes with multiple streams each. Mathematics is the second subject after English, and it has more periods per week. How can one be expected to be creative and efficient with large classes, numerous streams, and heavy teaching loads? *(Interview, HoS in School E, March 16th 2022).*

The HoS highlights critical issues related to teacher workload, focusing on its impact on creativity and efficiency in teaching. Mathematics teachers, in particular, face significant overload, teaching multiple classes and streams, resulting in a high number of weekly teaching periods. This imbalance likely stems from a shortage of qualified Mathematics teachers, creating a systemic issue within the school. Heavy teaching loads and large class sizes hinder teachers' ability to be creative and efficient. Creative teaching involves developing engaging lesson plans, using diverse methods, and incorporating innovative tools. For Mathematics, a core subject with many weekly periods, managing large classes requires additional effort to maintain order, ensure engagement, and address individual needs. Despite stipulated maximum teaching loads, some educators exceed these limits due to teacher shortages. Lyimo et al. (2017) noted that mathematics and science teachers in Tanzania often bear heavier workloads than art teachers, which impacts teaching effectiveness. George (2021) found similar issues in Kisarawe district, where teacher shortages from transfers led to overloaded teachers.

FGD and interview data revealed that heavy teaching loads resulted in fewer tests, exercises, homework, and group assignments. Teachers minimised classroom activities to ease the marking burden, particularly in larger classes, simplifying

grading despite its negative impact on student learning, as supported by one FGD participant:

> Inequitable teacher deployment affects the effective assessment of students. In subjects with an acute teacher shortage, we typically provide minimal classroom exercises, tests, homework, and group assignments. As a result, students do not have access to sufficient classroom exercises and other activities to strengthen their skills adequately (*FGD, Teacher KL in School C, March 10th 2022).*

The extract shows the consequences of inequitable teacher deployment on the assessment and skill development of students. When there is a significant shortage of teachers, the ability to provide comprehensive evaluations is severely hindered. Teachers, overwhelmed by large class sizes and excessive workloads, are unable to dedicate sufficient time and resources to creating and grading a variety of assessments. Minimal classroom exercises, tests, homework, and group assignments mean that students have fewer opportunities to demonstrate their understanding and receive feedback. Regular assessments are crucial for identifying students' strengths and weaknesses, guiding instructional adjustments, and supporting student learning. The lack of these assessments limits teachers' ability to monitor student progress and intervene when necessary. These findings are supported by Lyimo et al. (2017).

Using less participatory pedagogies as opposed to participatory pedagogies

We observed that in subjects facing a shortage of teachers, the prevalent teaching method is often the lecture format rather than the participatory or student-centred approach. The adoption of the lecture method is more common when dealing with large classes, especially when multiple streams are consolidated into one classroom during a lesson. A Mathematics teacher highlighted in a FGD that:

> In subjects with severe teacher shortages, we typically use the lecture method rather than the participatory method, which is highly recommended and suitable for this level. It isn't easy to attend to and take care of each student because the classes are too large. Consequently, it is challenging to capture the attention of each student during teaching and learning in that situation *(FGD, Teacher E in School B, 8th March 2022).*

The severe teacher shortages significantly impact teaching methodologies and classroom dynamics. With insufficient teachers, schools shift from interactive, participatory methods to more traditional lecture-based approaches. The participatory process, which promotes critical thinking and deep understanding through active student engagement, is ideal but less feasible with fewer teachers. Consequently, teachers rely on the lecture method, where students passively receive information, reducing

opportunities for collaborative learning and practical application of knowledge. Furthermore, large class sizes exacerbate the problem, making it challenging for teachers to manage classrooms effectively and provide individual attention. This situation diminishes students' ability to grasp material thoroughly and affects their engagement levels. The lecture method, combined with overcrowded classes, leads to decreased student attention and participation, resulting in lower information retention and enthusiasm for learning. This disengagement can contribute to poorer academic outcomes. These findings echo Mulkeen et al. (2017) observations that large class sizes and teacher shortages lead to ineffective teaching, underscoring the need for improved resource allocation and teaching methods to enhance educational quality.

Poor coverage of topics and syllabus

Throughout our study, we identified that in subjects experiencing teacher shortages, certain topics either were entirely unaddressed or received inadequate and partial coverage due to an insufficient number of teachers. This observation found backing from an official in the district, who asserted that:

> Inequitable teacher deployment has many effects on teaching and learning. For instance, if a school has only one teacher for a particular subject, it becomes difficult to cover all topics or the syllabus on time and effectively. This often leads to poor students' performance in national examinations, ultimately resulting in low or poor overall school performance and diminishing the quality of education in the country *(Interview with Official, March 25th 2022)*.

The Official outlines how it was challenging for the teacher to cover the entire syllabus adequately within the academic year. Important topics may be rushed or omitted, and the depth of coverage for each topic may be insufficient. This scenario results in students not receiving comprehensive instruction in the subject, leaving gaps in their knowledge and understanding. The inability to cover the curriculum effectively compromises the quality of education students receive, which is fundamental for their academic development and future educational success. These findings align with Donitsa-Schmidt and Zuzovsky (2014), who identified failure to meet educational standards and expectations set by the Ministry of Education as one of the repercussions of teacher shortages faced by school principals in Israel. Similarly, Noor et al. (2012) assert that teacher shortages, often caused by transfers within schools, impede syllabus coverage and lead to inadequate syllabus completion during academic sessions.

Students' limited choice to learn preferred subjects

Data analysis revealed that there were three consequences of inequitable teachers' deployment in the studied schools in Selected Rural District. These were impacts on subject choice, student attitudes towards subjects, and educational outcomes. One informant expressed:

> In schools with teacher shortages, students often lack the opportunity to learn the subjects of their choice. For instance, Mathematics and Science subjects frequently suffer from an inadequate number of teachers in many schools. Consequently, many students develop a dislike for subjects with insufficient teaching staff and ultimately avoid studying them further. This is why Science subjects and Mathematics are typically pursued by only a few determined students who are willing to learn them despite the absence or teacher shortages in these subjects *(Interview, HoS in School F, March 21st 2022).*

Teacher shortages significantly impact students' access to critical subjects like Mathematics and Science. Without enough teachers in these areas, students miss out on essential instruction, which limits their academic and career opportunities, particularly in fields requiring strong foundations in these subjects. This scarcity not only affects students' academic choices but also shapes their attitudes. Inadequate instruction can lead to frustration and a negative perception of Mathematics and Science, discouraging students from pursuing these fields further. Over time, this aversion creates a cycle where the lack of qualified teachers reduces student interest and engagement, compounding the shortage of skilled teachers. Consequently, only a few highly motivated students persist in these subjects, often relying on self-study or external tutoring. This disparity in educational outcomes leaves many students behind and impacts the broader education system and workforce, resulting in fewer individuals prepared for STEM careers. For instance, in School A, only six out of fifty students chose to study Physics and Chemistry, with poor performance outcomes in these subjects. These findings align with Ndalichako and Komba's (2014) assertion of a nationwide shortage of science teachers.

Poor classroom management

Our study findings also highlighted poor classroom management resulting from a large number of students after combining multiple streams into a single class due to inadequate teachers. For example, in four out of six visited schools, one teacher was responsible for instructing approximately 80 to 110 students in a single class, particularly in English, Mathematics, and science subjects. This overcrowding created ineffective classroom management during the teaching and learning process. The large class size hindered a teacher's ability to move freely

within the classroom, making it challenging to control and manage it easily. One teacher shared her perspective during an FGD:

> Inequitable teacher deployment in schools leads to mismanagement of students and academic activities due to teacher shortages. When the number of teachers is insufficient compared to the number of students, it becomes challenging to manage students both inside and outside the classroom effectively. This contributes to high absenteeism among students *(FGD, Teacher Q in School E, 16th March 2022).*

In this extract, the teacher emphasises the challenges posed by teacher shortages in providing effective instruction and managing academic and extracurricular activities. With a high student-to-teacher ratio, teachers struggle to offer individualised attention, manage classrooms effectively, and cater to diverse learning needs. The lack of sufficient staff also affects the supervision of students, organisation of events, and completion of administrative tasks, leading to a chaotic learning environment where students may feel unsupported. This mismanagement contributes to higher student absenteeism, as a disorganised educational environment and inadequate support diminish students' motivation to attend school. Absenteeism creates a cycle where disengaged students miss more classes, disrupting the learning process for both them and their peers in overcrowded classrooms. Additionally, insufficient supervision and engagement opportunities outside the classroom can lead to students feeling disconnected from the school community, further increasing absenteeism. These observations align with Faraji (2018), who found increased absenteeism in schools with higher teaching workloads and how large class sizes make classroom management challenging.

Poor students' performance in national examinations

Some respondents emphasised that inequitable teachers' deployment has substantially contributed to poor students' academic performance, as reflected in national examinations. It was highly challenging for students to perform in teachers' absence or short supply. For example, Schools A and B faced a severe shortage of English, Mathematics, and Science teachers and student's performance in these subjects in the 2021 Form Four national examination results was poor, as indicated in Table 3:

Table 3

Students' Academic Performance in Selected Subjects in Selected Schools in Selected Rural Districts in 2021 National Examinations

School Name and Subject	Candidates Passed	Candidates Failed	Grades for Passing
School A (Physics)	01	05	D
School A (English Lang.)	12	38	D
School A (Kiswahili)	50	50	Various
School B (Physics)	16	39	D
School B (Basic Maths)	15	129	D

Source: District Examination Records

The availability of quality teachers and their equitable deployment within the education system is essential to foster the teaching and learning process and, consequently, improve students' performance in schools. An experienced teacher shared this during the study:

> When schools lack adequate teachers, there is a noticeable decline in effectiveness, efficiency, and creativity in the classroom teaching and learning process. This shortage leads to poor student performance in national examinations, especially in subjects with a severe teacher deficit. Without qualified teachers, students struggle to achieve high academic standards, negatively impacting their overall performance and the quality of education within the country (*FGD with teachers from School C,10th March 2022*).

Teacher shortages severely affect the effectiveness, efficiency, and creativity of teaching. With insufficient teachers, delivering personalised instruction and creative lessons becomes difficult, limiting student engagement and effective learning. This shortage impacts subjects with deficits the most, leading to missed content and guidance, poor exam performance, and reduced future opportunities. The lack of qualified teachers results in gaps in understanding, lower scores, and diminished student motivation. These issues align with Bruns et al. (2019) and Bryson et al. (2020), highlighting how teacher shortages contribute to poor academic outcomes.

Conclusion

The study concludes that inequitable teacher deployment in public secondary schools in a selected rural district is caused by inadequate supply, high misallocation, and elevated turnover of teachers, posing significant challenges to effective teaching and learning. Despite increasing demand driven by rising student enrolment, curriculum requirements, and policies for equitable education, the supply of teachers in rural areas remains insufficient. According to labour market theory, this shortage arises because poor incentives, working conditions, and limited

career development opportunities deter teachers from rural positions, leading to understaffing, overcrowded classrooms, and overworked staff, which negatively impact education quality. The findings also show that inequitable deployment adversely affects academic performance and teaching material preparation. Addressing these issues requires robust educational plans to ensure equitable teacher distribution. The government and educational stakeholders must take urgent measures to enhance student learning and overall education quality. Teachers are essential resources for sustainable development in the country's education system.

Recommendations

Based on our research findings, several recommendations are proposed to improve teacher deployment in Selected Rural District's public secondary schools. First, a comprehensive deployment strategy that incentivises rural postings is crucial to address deployment inequities. Second, educational authorities must adhere strictly to rules and guidelines for recruitment, postings, transfers, and promotions, ensuring decisions are merit-based and meet academic needs, free from political influence. Third, focusing on deploying adequate teachers in critical subjects like Mathematics, English, and sciences requires coordinated government and educational body plans to identify priority areas. Fourth, providing incentives such as housing allowances and hardship benefits can attract and retain experienced teachers in challenging environments. Finally, improving working conditions, including access to social amenities, reliable transport, communication networks, and better infrastructure, is essential for supporting teachers' professional and personal well-being. Implementing these recommendations will help address teacher shortages and deployment disparities, enhancing education quality in the district's secondary schools.

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