unicef
for every child

Teachers for All

Strengthening equitable teacher deployment to improve learning in Ghana

In partnership with:
Ministry of Education Ghana

Ministry of Education
REPUBLIC OF GHANA

Contents

List of acronyms and abbreviations ii

Executive summary 1

1. Teachers for All: The research 7

2. Education in Ghana 11
2.1 General background 11
2.2 Teacher management and deployment 18
2.3 Key challenges in teacher deployment 27

3. Key findings 32
3.1 Demographic and qualifications overview 33
3.2 A moderate national PTR masks regional variation 37
3.3 Teacher shortages are concentrated geographically 44
3.4 Some schools face teacher shortages despite having sufficient PTRs 51
3.5 Women teachers are overwhelmingly concentrated in urban areas 57
3.6 Teachers are not deployed to schools where they are most needed 64
3.7 About a fifth of districts fail to meet national and international targets for teacher deployment 69
3.8 Several factors other than learner enrolments play a role in teacher distribution 72
3.9 Within-school inequities in teacher allocation are persistent in rural and private schools 76
3.10 Women are underrepresented as teachers in STEM subjects 81
3.11 Higher PTR is negatively related to overall learning 91

4. Conclusion and policy recommendations 96

Annexes 103
Annex 1. Additional background on teacher management and deployment 103
Annex 2. List of high-priority districts facing significant teacher deployment issues 112
Annex 3. Regression output table for teacher deployment analysis 114
Annex 4. Comparison of characteristics between all public basic schools and the analytical sample used for grade-level PTR analysis 115
Annex 5. Regression output table for student learning analysis 116

References 118

Acknowledgements 122

About us 123

List of acronyms and abbreviations

BECE	Basic Education Certificate Examination
CoE	College of Education
CPD	Continuous professional development
DL	Differentiated learning
EMIS	Education Management Information System
ESA	Education Sector Analysis
ESP	Education Strategic Plan
GALOP	Ghana Accountability for Learning Outcomes Project
GES	Ghana Education Service
GES-MIS	Ghana Education Services Management and Information System
GPE	Global Partnership for Education
GDP	Gross domestic product
GTEC	Ghana Tertiary Education Commission
GTLE	Ghana Teacher Licensure Examination
HRMD	Human Resource and Management Directorate
JHS	Junior high school
LOI	Language of instruction
MMDE	Metro, Municipal and District Education
MoE	Ministry of Education
NaCCA	National Council for Curriculum and Assessment
NST	National Standardized Test
NTC	National Teaching Council
PTR	Pupil-teacher ratio
QPTR	Pupil-qualified teacher ratio
REO	Regional education office
SHS	Senior high school
STEM	Science, technology, engineering and mathematics
T4A	Teachers for All
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
UTDBE	Untrained Teachers Diploma in Basic Education

Executive summary

The Government of Ghana is committed to giving every Ghanaian child the opportunity to succeed and contribute to national development. Recognizing education as critical to achieving this goal, the Government has made the improvement of education quality a national priority. Although Ghana has made rapid strides in expanding access to education since becoming independent, there is still work to be done to improve education quality. Learning assessments indicate that many Ghanaian students are not experiencing effective learning in schools, from foundational learning up to more advanced skills. In response to poor learning outcomes, the Ghana Ministry of Education (MoE) has made its teachers central to the nation's strategies for improving the quality, efficiency and equity of the education system. However, Ghana continues to face numerous challenges in its efforts to recruit, prepare, equip and support its teacher workforce.

Teachers are critical to improving the quality of education. Ensuring inclusive and equitable access to quality education is one of the key goals of the Global Education 2030 Agenda and Ghana's Education Strategic Plan (ESP) 2018–2030. However, the uneven distribution of teachers – both across and within schools – contributes to disparities in class sizes and learning conditions. International evidence, including multiple studies from Ghana, continues to highlight the negative relationship between the inequitable distribution of teachers and learning.

Teachers for All (T4A) is a mixed-methods research programme that generates evidence on teacher allocation. This report presents findings from Ghana to support policymakers in understanding the distribution of teachers at the primary and junior high school (JHS) level in public schools, as well as to inform ongoing efforts to improve teacher deployment.

Key findings

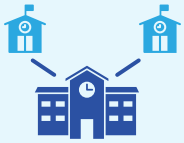
- Ghana has made significant progress in strengthening its teacher management systems through data- and evidence-driven measures. Recent policy actions have promoted more data-driven teacher deployment and outlined greater guidance on the licensing, registration and promotion of teachers under national minimum standards. Reforms in teacher pre-service education have established holistic teaching standards and raised minimum qualifications to enter the teaching profession. A new data management system will also bring all teacher deployment data into a central system, supporting data-driven decision-making for central agencies, decentralized officials and school administration nationwide.

- Still, inefficiencies in human resource planning in the education sector have led to mismatches in teacher demand and supply. Teacher allocation is highly centralized, resulting in a shortage of teachers in some schools, in some education and grade levels, and in some subjects, while others benefit from oversupply. Teachers' language skills are not yet factored into the deployment process, resulting in many educators being deployed to classrooms in which they do not speak or read the official language of instruction (LOI) and/or language(s) of students. Inefficiencies in teacher allocation are compounded by unclear and inefficient deployment and transfer processes, both characterized by frequent interference and non-compliance.

- The average pupil-teacher ratio (PTR) in Ghana at the basic education level, currently 32:1, is broadly aligned with both international and national benchmarks for effective classroom instruction. However, its PTRs at the kindergarten and primary levels of 40:1 and 37:1, respectively, fail to meet national targets of 35:1. Comparatively, the average class size at the JHS level is much smaller, at 20 students per teacher, far exceeding the national goal for a PTR of 30:1 for JHS. When considering recently revised teacher qualification standards, the proportion of qualified teachers per pupil remains relatively high, suggesting persistent disparities in access to qualified teachers across levels. Furthermore, studies from Ghana and elsewhere show that larger classes are associated with weaker learning outcomes.

- Teachers are not only distributed inequitably across regions, but also across districts within those regions. For example, while data shows a somewhat marginal shortage of primary teachers at national level (with the average PTR of 37:1 only slightly surpassing the national target of 35:1), aggregate statistics conceal important sub-national variations. Around 34 per cent of districts (89 of 261 districts) are experiencing acute teacher shortages at the primary level, with an average PTR of more than 40:1.

- Compared to their urban counterparts, rural schools experience greater shortages of both qualified and women teachers. At the national level, rural schools and urban schools have somewhat similar PTRs (33:1 and 29:1, respectively), but this disparity widens drastically when accounting for teacher qualifications (with pupil-qualified teacher ratio (QPTR) of 67:1 and 43:1, respectively). Resultingly, children in urban schools most likely benefit from relatively better learning conditions – in terms of class sizes and access to qualified teachers – compared with rural schools. Additionally, the share of women teachers in rural schools is 34 percentage points less than that of urban schools at the primary level, and 23 percentage points less at the JHS level. At the JHS level, women teachers are also underrepresented in the science, technology, engineering and mathematics (STEM) subjects, particularly disadvantaging rural schools.



- Findings reveal two distinct forms of teacher shortages in Ghana: (i) schools with large class sizes, and (ii) those lacking sufficient teachers per grade/subject. Each requires their own tailored responses. For example, around 21 per cent of public primary schools in Ghana do not have enough teachers to facilitate single-grade instruction but would not be classified as having teacher shortages based on their relatively low PTRs.

- The inequity in teacher distribution is mainly concentrated inside districts. Most districts in Ghana have a high variation of PTRs, which means there is a large spread of PTRs between schools in that area. This implies that inequities in teacher distribution are more significant inside the districts themselves than between districts. A majority of districts in Ghana also experience low coherence, which is when teacher allocation does not correlate with learner enrolment numbers.

- Most disadvantaged districts in Ghana, in terms of the efficiency and equity of teacher deployment at the primary level, are in the Central and Greater Accra regions. About 20 per cent of all districts fail to meet both international and national standards for coherence in teacher deployment and PTR at the primary level. These districts should receive immediate government support and action to rectify issues in teacher deployment.

- The inequitable distribution of teachers across and within schools contributes to significant disparities in class sizes and negatively impacts learning. Data from Ghana reveal that larger class sizes are negatively associated with learner performance in both the second grade of primary (P2) and the third year of JHS (JHS3). Reducing class sizes may not improve learning on its own, but it represents a key enabling condition.

Key policy recommendations

To strengthen equitable access to a qualified teacher workforce:

1. **Using localized data in decision-making can improve the targeting of resources.** District-level data can identify areas that face the sharpest and most persistent teacher shortages. Prioritizing additional teacher deployment in these districts will have the highest returns in terms of improving learning conditions. More specifically, the MoE can leverage the forthcoming Ghana Education Services Management and Information System (GES-MIS) to better enable subject and language match during teacher deployment.

2. **Prioritize teacher recruitment and retention measures for rural areas to improve equity in the system.** There are two broad sets of interventions that can mitigate the challenges of serving in rural areas: (i) strengthening incentives for teachers (both financial and non-financial), and (ii) addressing the physical constraints of living in rural areas. Considering the Government of Ghana has recently committed to the institution of the Deprived Area Allowance, there is a need to ensure that financial support for teachers working in remote and rural areas are effective, appropriate and tailored to their unique needs and context. The former Untrained Teachers Diploma in Basic Education (UTDBE) programme sought to expand the pool of qualified teachers

in rural areas; however, further research is needed to understand how effectively it improved instructional quality and student learning outcomes. Strengthening the recruitment of aspiring teachers from rural areas may also increase the supply of teachers willing and able to serve remote schools.

3. **Address the additional barriers that women teachers face in rural areas.** Measures to address barriers faced by women teachers when deployed to rural areas may include investing in school infrastructure – such as electricity access and sanitation facilities – and providing targeted support for women teachers, including the provision of childcare at schools and incentive packages specifically tailored to their needs. Furthermore, encouraging more female learners to pursue STEM careers will require supporting more women mathematics and science teachers, along with systemic efforts to encourage learners and teachers alike to move beyond stereotypes.

4. **Within-district teacher transfers can be the fastest way to equalize learning conditions across schools, especially for disadvantaged schools in rural schools.** Deploying teachers locally also reduces the risk of uprooting or displacing teachers or requiring them to travel longer distances. This increases the likelihood that teachers will stay at their assigned schools.

5. **To address high turnover of rural teachers, localized recruitment from within or near the same districts could improve the teacher supply and increase the likelihood of retention.** While this approach shows promise, more research is needed to determine the full impact of local recruitment on retention rates and student outcomes.

To build the capacity of human resource planning, forecasting and coordination:

6. **Strengthen coordination between the MoE and colleges of education (CoEs) and their faculties of education.** The Planning, Budgeting, Monitoring and Evaluation Directorate at the MoE could strengthen its forecasting of teacher demand and analyse this information together with CoEs to inform their recruitment and intake of teacher candidates. It is critical to address imbalances in the supply and demand of kindergarten and primary teachers so that enough are prepared and deployed to meet the needs of early

grade classrooms, particularly in underserved regions. Additionally, this requires collaborating with training institutions to reduce the intake in saturated fields such as humanities while promoting supply in higher-demand subjects such as the sciences.

7. **Institutionalize and enact a teacher management policy.** Formalizing teacher recruitment, deployment and transfer processes through a policy can establish clear criteria-based standards to improve transparency and accountability. Such a policy should require that regular data collection on teacher language abilities is integrated into the MoE's current data systems and utilized during the deployment process, although additional research on issues of language match is also necessary for subsequent policymaking. The implementation of the policy should be piloted with feedback gathered from teachers and regional education directors to ensure consistent and relevant application.

8. **Identify channels in which local knowledge can be incorporated into the recently recentralized teacher deployment process, while maintaining central oversight and transparency.** The decision by the Government of Ghana to centralize the teacher deployment process was motivated by (i) persistent inefficiencies in a non-transparent teacher allocation system, in which decisions were vulnerable to regular interferences by engaged actors, and (ii) the need for a more data-driven teacher management process. However, local education actors and community members – now completely removed from the teacher deployment process – tend to have better information on both school needs and teacher preferences. They are also generally better positioned to coordinate decisions around transfers, monitor compliance and ensure the deployment of replacement teachers. To better leverage such actors in the teacher allocation process, there is a need to build the capacity of local authorities to support teacher deployments, orientations and transfers.

CHAPTER 1

Teachers for All: The research

The 2030 education agenda promotes inclusive and equitable access to quality education for all. The equitable deployment of trained and qualified teachers is key to achieving this goal, ensuring that every child can develop their full learning potential regardless of where they live and who they are.

The Teachers for All (T4A) project[1] aims to understand the magnitude and distribution of teacher shortages in sub-Saharan African countries. In Ghana, the project leverages administrative and learning assessment data to identify patterns in teacher distribution and support the agenda of the MoE to improve teacher deployment.

This report focuses on teacher deployment in the basic education cycle of Ghana (specifically the primary and JHS levels) and in its public school system. It leverages school census and learning outcomes data and existing literature, coupled with key stakeholder consultations, to illuminate trends and issues regarding teacher recruitment and deployment in public basic schools.

1 An overview of the T4A project is available on the UNICEF website (http://unicef.org/innocenti/projects/teachers-all).

The report is divided into four main sections. This section presents an overview of the T4A research in Ghana. Section 2 presents a background on the Ghanaian education system and, more specifically, its teacher management policies and practices. Section 3 presents the main findings on teacher deployment trends from the secondary analysis of existing education datasets. The final section discusses the findings and presents policy recommendations from the research.

The analysis in this report is underpinned by a co-creation process to ensure the relevance of its scope and direction. The design of this project was informed by multi-stakeholder workshops with the MoE and Ghana Education Service (GES) officials, civil society organizations, researchers, and development partners. This process collaboratively shaped the research questions, ensuring that the project responds directly to challenges in Ghana and supports the MoE strategy, policy priorities and ongoing education reform agenda. The analysis is guided by the following questions:

1. How are primary and JHS teachers distributed across public schools in Ghana? What are the differences in teacher allocation across and within regions, districts and schools?
2. What are the differences in teacher allocation across grades?
3. What is the relationship between teacher allocation and learning outcomes? Does learner performance vary based on school and teacher characteristics (qualifications, years of experience, gender, etc.)?

Important concepts for this report are defined in *Box 1*.

BOX 1

Definitions of key concepts

This study focuses on the distribution of teachers within basic education schools at the national, regional and district levels. Teacher allocation patterns are captured through three key metrics:

1. *PTR* captures the average number of pupils per teacher at each level of education in a given academic year, calculated at the school level in this report. Beyond the national average PTR metric, assessing the average PTR values at lower administrative levels enables policymakers to compare teacher allocation across geographical areas to inform policy actions. In addition to discrepancies in absolute PTR, exploring variation in PTRs (measured through the standard

deviation) captures the spread or dispersion of PTRs. This metric quantifies the imbalance in teachers between schools within a district and the extent to which resources are allocated efficiently.Definitions of key concepts

a. *Teacher shortages* can be assessed relative to national policy benchmarks. The Ghana ESP 2018–2030 recommends PTRs of 35:1 for kindergarten and primary, 30:1 for JHS, and 25:1 for senior high school (SHS). In this report, a school, district or region is considered to be facing a teacher shortage when its observed PTR exceeds the relevant benchmark.

2. *QPTR* captures the average number of pupils per qualified teacher at each level of education in a given academic year, calculated at the school level in this report. A qualified teacher is one who has at least the minimum academic qualifications required for teaching their subjects at the relevant level in a given country in a given academic year.

3. *Degree of coherence* (measured through R^2, with values ranging between 0 and 1) measures the strength of the statistical association between the number of teachers and the number of pupil enrolments in a school. It is based on the principle that the number of teachers in a school should be consistent with – or explain the variation in – the number of pupils. For example, an R^2 value of 0.9 reflects a case where 90 per cent of the variation in teacher allocation is attributable to differences in student enrolment, meaning teacher supply decisions are highly correlated with the teacher gap. Conversely, an R^2 value of 0.3 reflects a case where only 30 per cent of the variation in teacher allocation is attributable to differences in student enrolment. Such a low R^2 value suggests an inequitable allocation of teachers in which the number of teachers is not consistent with the number of pupils enrolled and is instead influenced by other factors. In this report, the degree of coherence was calculated at national, regional and district levels.

The analysis included two main steps: (i) a comprehensive desk review of existing policy and programme documents and grey literature on teacher management in Ghana, and (ii) secondary analysis of existing education datasets. In order to conduct this analysis, the project draws on various data sources:

- **Multiple policy and programme documents:** The 2024 National Development Planning Commission's Long-Term National Development Perspective Framework, the ESP 2018–2030, the forthcoming Education Sector Analysis (ESA) report, the Global Partnership for Education (GPE) Partnership Compact for Ghana, subject-specific curricular documents for the Common Core Programme, the National Teaching Council's (NTC)

Induction Handbook for Newly Qualified Teachers, the Ghana National Teachers' Standards, and the Collective Agreement for Teaching Staff within GES.

- **Education Management Information System (EMIS):** EMIS data from 2020/21–2022/23 were used to produce descriptive statistics and conduct econometric analysis. These were the latest available data at the time of analysis.
- **National Standardized Tests (NSTs):** Results from the 2022 Grade 2 and Grade 4 NSTs for literacy and numeracy, conducted by the National Council for Curriculum and Assessment (NaCCA), were used to produce descriptive statistics. The 2022 Grade 2 NST learning data were also merged with 2022/23 EMIS data to assess the relationship between PTR and learning outcomes in Grade 2.

To design and validate this research, two co-creation workshops were held in Accra in November 2024 and April 2025 with a group of MoE representatives and other relevant education stakeholders. Additionally, 10 key informant interviews with MoE and GES officials, education practitioners, and development partners were conducted to better understand the processes for teacher education, recruitment, deployment, and management in Ghana, and the challenges such systems face.

This stage of the T4A research has limitations that should be considered. The analysis for this report relied heavily on EMIS data. While this is most comprehensive administrative source available, it can be limited in its accuracy and completeness due to issues such as data entry errors, inconsistencies across reporting years and incomplete coverage of certain school or teacher characteristics. Furthermore, results from regression analysis should be interpreted with caution as the analysis does not reveal whether the correlations observed represent causal effect. For example, data may show that student learning outcomes are marginally higher when teachers are younger. However, this does not necessarily mean that hiring or retaining younger teachers will improve learning. Instead, it could be that schools with younger teachers have more consistent trainings and other teacher collaboration policies, all of which could contribute to better performance on standardized assessments. Hence, the presented results are not necessarily causal, and they must be considered in tandem with other similar research and available analyses. Despite these limitations, findings are relevant for policymakers and can provide insights into positive education policies and practices, while also identifying directions for future research.

CHAPTER 2

Education in Ghana

2.1 General background

The Government of Ghana is committed to giving every Ghanaian child the opportunity to succeed through learning, firmly aligned with the Sustainable Development Goal on education (SDG 4). As indicated in the Long-Term National Development Perspective Framework (or 'Vision 2057'), Ghana is dedicated to "building high-quality, equitable and inclusive education at all levels and promoting life-long learning opportunities for all" (National Development Planning Commission, 2024, p. X). To this end, the ESP 2018–2030, developed by the Ghana MoE, establishes strategies and targets for achieving universal access to quality education and effectively managing education service delivery. The MoE has also embarked on a national education reform (2019–2030), which aims to improve the access, quality and relevance of education through various interventions, including curriculum review, teacher professional development and infrastructure development.

Ghana has made significant progress in increasing access to education for all children. The gross enrolment rates at the primary and JHS levels stood at 99.6 and 98.4 per cent, respectively, during the 2022/23 academic year. However, while access to secondary education has also increased since the launch of the Free SHS policy in 2017, enrolment rates have declined in recent years (Ghana, MoE, forthcoming). Additionally, while Ghana has achieved national gender parity at all basic education levels, there still remain inequities based on region, income and gender (Ghana, MoE, forthcoming).

Free Compulsory Universal Basic Education (FCUBE) and accessibility to secondary and vocational education is guaranteed by the Constitution. The Pre-Tertiary Education Act of 2020 (Act 1049) sets out the system for the levels of basic, secondary, and technical and vocational education and training, while the Complementary Education Act of 2020 (Act 1055) addresses education for those outside the formal system. The Free SHS policy made public secondary education free in 2017. As stated, the Ghana ESP 2018–2030 recommends PTRs of 35:1 for kindergarten and primary, 30:1 for JHS, and 25:1 for SHS. Nationally, EMIS 2022 data reveal that public schools in Ghana are making significant progress towards achieving these goals, while public JHSs have already met their PTR targets. Such progress is likely driven by more efficient teacher deployment since the total number of basic education teachers has declined in recent years.

However, Ghana continues to face low student learning levels. For example, results from the NST in 2022 found that for Grade 4 students, only 21 per cent met the proficiency threshold for mathematics, and only 17 per cent for English (NaCCA, 2022).[2] Foundational learning outcomes vary by region, student gender and school ownership (MoE et al., 2025). Results from the Basic Education Certificate Examination (BECE) and the West African Senior Secondary Certificate Examination also indicate poor performance in English and mathematics and significant regional disparities, often to the detriment of girls (Ghana, MoE, forthcoming).

The poor foundational learning outcomes in Ghana have refocused attention on teachers. Teachers have become central to the country's strategies for improving the quality, efficiency and equity of the education system. Stated

2 The ESP 2018–2030 targets 50 per cent proficiency in mathematics and 65 per cent in English for Grade 4 learners by 2029/30.

in its latest Partnership Compact,[3] Ghana recognizes that "strengthening teaching and learning practices in KG1-P3 classrooms is a necessary shift to achieve ambitious targets in foundational learning" (Ghana, MoE, 2024, p. 8). The ESP similarly recognizes the need to "enhance teacher recruitment and deployment" in efforts to guarantee access to an adequate number of prepared and motivated teachers for all students. To further deepen the government's commitment to teachers and their preparation and professional growth, the MoE has recently implemented a new Bachelor of Education teacher education curriculum and allocated each teacher a stipend for participating in continuous professional development (CPD) opportunities.

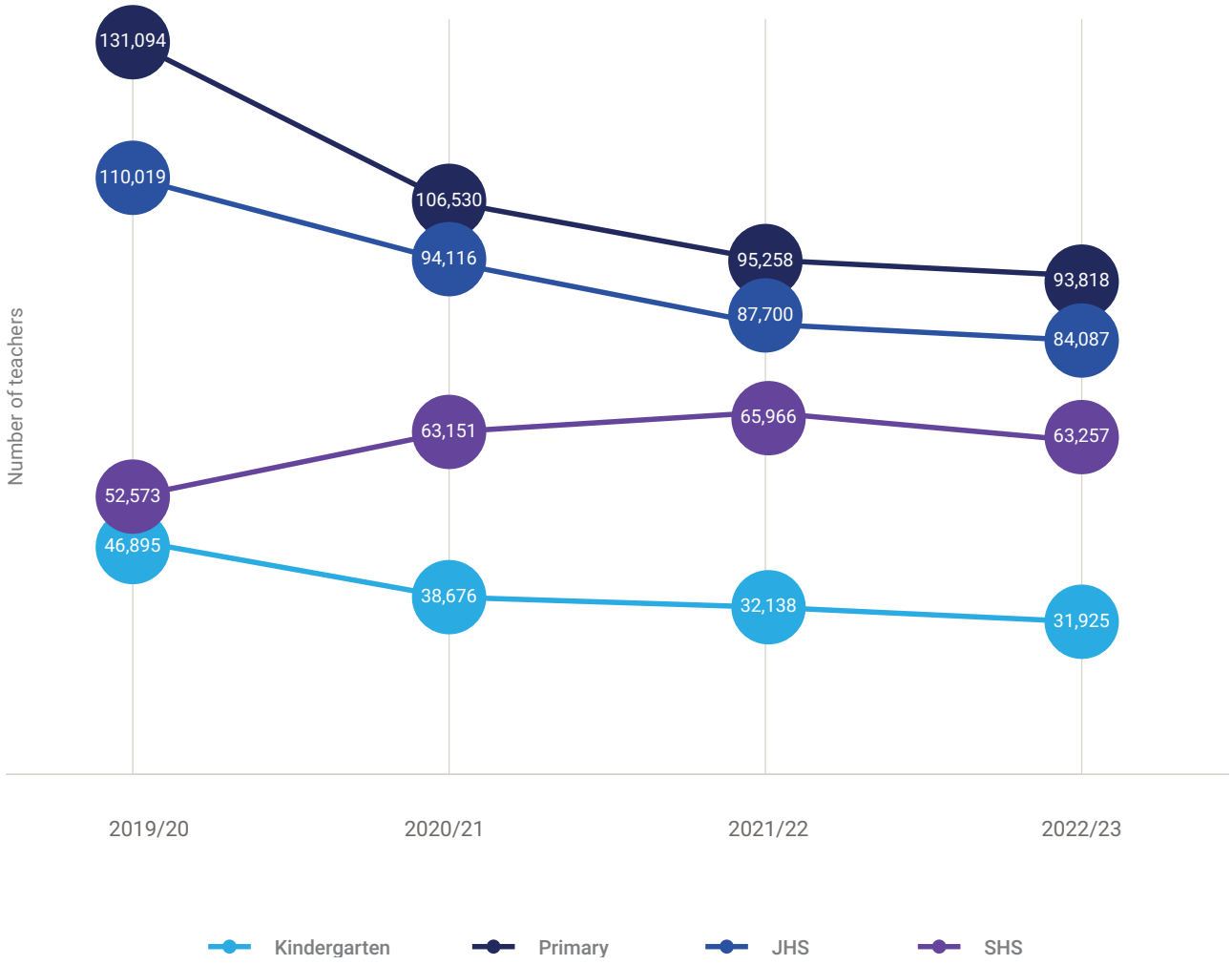
However, Ghana continues to face numerous challenges in its efforts to recruit, prepare, equip and support its teacher workforce. The 2018–2030 ESP stated that "deployment of teachers is [...] a concern, with large regional disparities in pupil–teacher ratios and weak correlation between the number of students and teachers within a district" (Ghana, MoE, 2018, pp. 4–5). Not only is there is a teacher shortage in Ghana, but inefficiencies also exist in the current distribution of available teachers. For every education level except SHS, the total number of teachers in Ghana has declined in recent years (*see Figure 1*). For example, while there were 131,094 primary teachers in Ghana in the 2019/20 academic year, this dropped to 93,818 teachers in the 2022/23 academic year, a loss of over 25 per cent. This decline in the teacher workforce has been paired with an increase in student enrolments over the same time period, resulting in a higher national average PTR at the primary level.

Teacher deployment is also inequitable, with high variance in PTRs and teachers frequently placed in schools where they are not proficient in the LOI (Epstein et al., 2019; Akseer and Játiva, 2021; Ghana, MoE, forthcoming). Shortages of teachers are acutely felt in rural and underserved settings, as there are few incentives for teachers to undertake deployment in these areas, with most qualified teachers found in the more urban and wealthy locations (Acheampong and Gyasi, 2019; Ghana, MoE, forthcoming). Limited access to accurate teacher data and inefficient deployment processes are limiting the GES human resource department in effectively addressing the inequitable distribution of teachers.[4]

3 A Partnership Compact is a requirement to access financing from the GPE.

4 This repeatedly surfaced in consultations and co-creation workshops with 27 education stakeholders for this project, representing 12 institutions.

Figure 1: Number of public teachers in Ghana by education level, 2019/20 to 2022/23



Source: Ghana, MoE, forthcoming

Notes: The greatest drop in the total number of public teachers at the kindergarten, primary and JHS levels occurs between the 2019/20 and 2020/21 academic years, potentially driven by the COVID-19 pandemic and prolonged school closures. Declines in the teacher workforce in subsequent years are more marginal for each education level. SHS is the only education level to experience an increase in its teacher supply over the period analysed.

The last in-depth analysis of teacher deployment in Ghana took place in 2019 using administrative data from the 2016/17 academic year. Through the United States Agency for International Development (USAID) Partnership for Education: Evaluating Systems activity, the Ghanaian MoE conducted a study on the state of teacher deployment. The analysis found that many districts suffered from inefficient teacher deployment, with a coexistence of teacher shortages and surpluses at the school, district and regional levels. The report concluded that the "primary driver of inequitable teacher deployment in Ghana is that current policies and practices on teacher

rationalization, deployment, recruitment, and retention are incomplete, inconsistently implemented, and ineffectively communicated" (Epstein et al., 2019, p. 5).[5] Findings from key informant interviews conducted as part of the T4A research suggest that the poor implementation of teacher management policies has been, in part, due to a lack of consistent commitment, clear communication and effective monitoring from leadership.

The MoE aims to further strengthen teacher management through a data- and evidence-driven approach. The institutional framework for teacher management in Ghana is described in *Box 2*. In support of the teaching profession, a Pre-Tertiary Teacher Professional Development and Management Policy was developed in 2012, and recently revised in 2020, to promote more data-driven teacher deployment and ensure proper licensing, registration and promotion of teachers under national minimum standards. GES is also currently developing a Management and Information System (GES-MIS) that will bring all teacher deployment data into a central system, supporting data-driven decision-making for central agencies, decentralized officials and school administration nationwide. In the forthcoming ESA, regional teacher supplies were projected until 2033 to identify regions where there could be a relative surplus of teachers as well as territories facing a shortage in teacher distribution.

5 Teacher rationalization refers to the systematic redistribution and deployment of teachers to ensure an equitable and efficient match between teacher supply and school-level needs, commonly measured through metrics such as the PTR and subject-specific requirements.

BOX 2

The institutional framework of education and teacher management in Ghana

The education system in Ghana is structured into three distinct levels, as outlined in the Pre-Tertiary Education Act. Basic education, or first-cycle education, includes two years of kindergarten, six years of primary school and three years of JHS.[6] Second-cycle education encompasses three years of SHS. At the senior secondary level, students can opt for an academic track via SHS or follow a technical or vocational track. In September 2017, SHS was also made free for all. While primary teachers are 'generalists' and responsible for the instruction of all required subjects, teachers at the JHS and SHS levels are specialized and responsible for one subject. Tertiary education includes CoEs, universities and other institutions that award degrees and diplomas.

The education offer in Ghana is composed of both public and private schools. According to EMIS data from the 2022/23 academic year, 24 per cent and 19 per cent of students at the primary and JHS levels, respectively, are enrolled in private schools. Thus, the vast majority of students access education through public schools.

In Ghana, the MoE is responsible for overseeing the education sector at the central level. The MoE's mandate is to initiate, review, and advise government policies and plans for the sector. It undertakes research necessary for the effective implementation of policies, and it evaluates, monitors, and coordinates the implementation of sector policies and strategies by state and non-state education actors. In addition, it sets standards and provides strategic direction for the delivery of quality and accessible education in the country.

The management of the teacher workforce in Ghana is split between three central units, each of which have been mandated a unique set of responsibilities:

1. The GES is charged with the responsibility of implementing pre-tertiary government education policies. It was established in 1974 by the National Redemption Council Decree (NRCD 247). It seeks to create an enabling environment in all educational institutions and oversees the management of positions that facilitate effective teaching and learning at the pre-tertiary level. The GES implements policies through its regional education offices (REOs), which oversee the

6 For this report, basic education will not include the one, non-mandatory year of nursery, sometimes called 'creche'. Creches and nurseries are not under the mandate of the MoE; therefore, EMIS data presented on this level do not represent national coverage as they are based on schools that voluntarily report.

operations of Metro, Municipal and District Education (MMDE) Directorates, handling technical and administrative tasks. GES is responsible for several key functions related to teachers, including: teacher recruitment and deployment, the provision of training and professional development opportunities, defining the compensation and benefits schemes, ensuring adequate working conditions and resources, and facilitating career advancement opportunities.

2. The NTC is an MoE agency established by the 2008 Education Act (Act 778) and mandated by the 2020 Education Regulatory Bodies Act (Act 1023) to promote teacher professionalism in Ghana. The NTC is mandated to establish professional practices and ethical standards for teachers and teaching. It is also responsible of the registration and licensing of individuals seeking to enter the teaching profession. The NTC manages and coordinates the country's national in-service teacher training system, including the accreditation of institutions offering teacher education and development programmes.
3. The Ghana Tertiary Education Commission (GTEC) is a government body in charge of the regulation of tertiary education institutions in Ghana, and it oversees pre-service teacher education.[7] In 2012, the passage of the Colleges of Education Act (Act 847) elevated the status of CoEs, prior called Teacher Training Centers. With the passage of this Act, CoEs became the responsibility of the GTEC.

There is a significant level of decentralization in the Ghanian education sector, with service delivery occurring through a three-tiered system of national-, district- and school-level actors. At the national level, the MoE and GES headquarters oversee policymaking, strategic coordination and teacher management functions, providing a critical link between national policy decisions and their operationalization across regions and districts. REOs and MMDE offices manage policy implementation and coordination, including in-service teacher training, inspection of primary and secondary schools, and provision of textbooks and stationery, within their jurisdictions. Each of these offices also have their own human resources department that oversee teacher management within their respective jurisdictions. Finally, schools deliver teaching and learning, provide school meals, oversee the short-term maintenance of buildings, and carry out several other essential tasks.

Teacher management and recruitment practices differ significantly between public and private schools in Ghana. While private schools are encouraged to register with their respective REO/MMDE office – a process that would help them access training opportunities and other resources – the GES does not engage in teacher deployment and management matters with such schools.

7 The National Council for Tertiary Education and the National Accreditation Board were merged under the Education Regulatory Bodies Act to form the GTEC.

2.2 Teacher management and deployment

This section examines how teacher management and deployment are structured and implemented in Ghana, both in policy and in practice. It draws on a review of government communications, official memos, policy and programme documents, as well as key informant interviews with relevant stakeholders. Additional information on (i) teacher education and licensure, (ii) teacher workforce planning and budgeting, and (iii) teacher professionalization and career pathways is provided in Annex 1.

General context

Previous attempts to document Ghana teacher management and deployment systems, guidance and commitments through policy documents have yet to gain traction. In 2019, the MoE developed a national teacher deployment policy that outlined long-term goals and strategies for managing the teacher workforce and distributing teachers equitably across the education system at all levels, but said policy was poorly disseminated at its inception, is no longer in circulation, and has not been endorsed by the current administration. In 2020, the MoE developed the Comprehensive National Teacher Policy (CNTP) in efforts to outline policy actions in the areas of teacher recruitment and retention, initial and continuing teacher education, deployment, career structure, teacher employment and working conditions, as well as teacher reward and remuneration. Unfortunately, with CNTP's current implementation plan ending in 2025 and with no current signals from the government to extend it, the policy never received the necessary funding to be implemented (Koomson and Konadu-Boakye, 2021).

As an agency of the MoE, the GES oversees the management of the teaching force, which includes the recruitment and posting of teachers. Similar to other neighbouring countries, a majority of the total GES budget – approximately 82 per cent – is allocated to the payment of salaries, crowding out other expenditures (Ghana, MoE, forthcoming).

Teacher recruitment and deployment in Ghana became centralized as of 2016. Previously, the decentralized approach involved MMDE Directorates overseeing the posting of newly qualified teachers. Schools would report vacancies to their respective MMDE offices, which then facilitated the placement of teachers to fill these positions. The main reason for a shift towards centralization was cited as the decentralized approach being lengthy and bureaucratic, leading to delays and inefficiencies in teacher placement. Under the centralized system, GES headquarters assumed full responsibility for the recruitment and deployment of teachers nationwide. While the reason for centralizing the process of teacher deployment included the removal of delays due to lengthy bureaucratic processes, the equitable allocation of teachers remains a serious concern. The Ghana ESP (2018–2030) includes a comprehensive reform of the GES human resource system along with further improvements to the efficiency of the basic education teacher deployment process.

Teacher vacancies are identified at the school level and transmitted to GES headquarters via the decentralized education offices. The academic calendar in Ghana runs from September to August, with an aim of completing all necessary teacher transfers and postings by August. Around May each year, GES headquarters will communicate the directive to schools to identify and declare their vacancies. With the support of their School Improvement and Support Officer, school leadership connects with each of their teachers (inquiring about those nearing retirement, those seeking to transfer or switch professions, etc.) to estimate the number of upcoming vacancies.[8] These vacancies are then reported to their respective MMDE Directorate. In turn, MMDE Directorates validate, consolidate and report vacant posts across their schools to their respective REO, who is then responsible for validating and reporting these vacancies to GES headquarters.

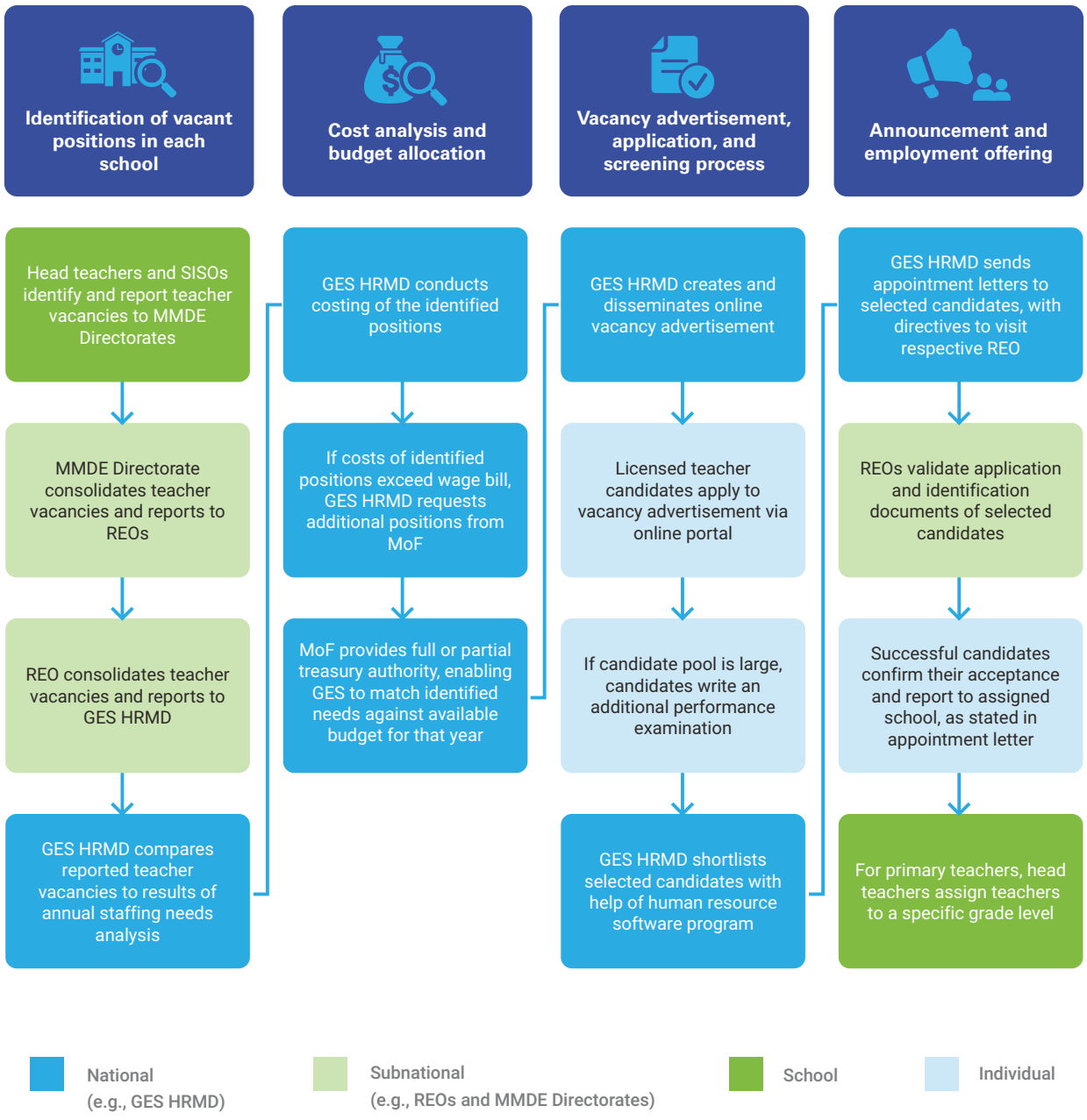
8 Schools can declare vacancies for subject-specific teachers at the JHS and SHS levels, or for a classroom teacher at the primary level (although the grade needed is not specified).

Typically, the identified vacancies are first filled via the transfer of currently active teachers from other schools, with the remaining posts filled by the deployment of new teachers from a qualified pool of candidates. While teacher transfers are primarily led at the level of the MMDE offices (pending oversight and approvals from REOs and GES headquarters), the postings of new teachers is a centralized process as of 2016, in which GES headquarters assign and deploy teachers directly to schools. Before this reform, both transfers and new postings were managed in a more decentralized manner by MMDE Directorates. However, the coexistence of a decentralized transfer process and a centralized posting process for new teachers – combined with weaknesses in administrative data systems and communication across GES levels – has at times resulted in the 'double-posting' of teachers. In such cases, more than one teacher (e.g., a transferring teacher and a newly deployed teacher) is assigned to the same vacancy in a single school. The GES-MIS was introduced to improve coordination between these two processes; however, the specific mechanisms through which the system will be used to support deployment decisions have not yet been clearly defined.

Teacher recruitment, selection and deployment

This subsection focuses on how new teachers are evaluated, selected and deployed to schools. The key steps of the teacher recruitment process are summarized in *Figure 2*.

Figure 2: Ghana teacher recruitment process at the basic level



Source: Authors

Notes: Previously, graduates from CoEs would be posted straight to schools upon graduation, while those from universities had to go through a formal evaluation and recruitment process. However, CoE graduates are now expected to apply for teacher vacancies alongside other candidates.

Recruitment and evaluation of public servants in the education sector, including teachers, follow official rules and practices set by the Public Services Commission and the Ghana Civil Service. There are no education-sector specific policies for teachers. There are however established procedures for recruiting teachers, administrators and other education professionals, typically through competitive applications, examinations and interviews.

The GES recruits and deploys newly qualified teachers each year. Once financial clearance is given to recruit new teachers, an online vacancy advertisement is created and disseminated on various media platforms. Applicants apply online, submitting their curriculum vitae and proof of their citizenship, licensure and participation in higher education certificate. Applicants are shortlisted based on their academic and professional qualifications but are sometimes also asked to present a written examination when the candidate pool is large relative to the number of vacancies. Successful candidates are offered appointment letters by the GES Human Resource and Management Directorate (HRMD) and directed to visit their assigned school's respective REO. REOs are then responsible for vetting application documents to confirm a candidate's eligibility for a vacant position and ensure that cleared teachers are then placed in their respective school postings.

In terms of the selection, the GES prioritizes the recruitment of eligible teachers that meet subject-specific needs and that have higher academic qualifications. With the creation of the GES teacher recruitment portal, decisions regarding teacher recruitment are largely automatized, with the selection of candidates and their assignment to schools largely determined by a human resource management software programme. In some cases, members at the HMRD at GES headquarters can contribute to the recruitment and assignment process, often giving some consideration for a candidate's language match and the relevance of their qualifications. There is political will from the GES for the development of a teacher recruitment process that involves a formal selection committee, but concrete plans for this are yet to materialize.

For the 2024/25 academic year, GES piloted a self-posting approach to teacher deployment, enabling prospective teachers to apply to the schools and vacancies of their choice and to indicate what regions they would prefer and be willing to be assigned to. In a 2024 press briefing, GES stated the

self-posting approach "has the benefit of getting newly qualified teachers to be posted to regions where language will not be a barrier" and will give teachers "the opportunity to choose schools closer to their families and enjoy the associated economic support" (GES, 2024, pp. 2–3). The impact of the pilot has yet to be evaluated, and it unclear if GES will continue this system of 'self-posting' in the future.

Decisions regarding teaching assignments, in theory, consider grade-level specialization (i.e., primary-level teachers are assigned to lower or upper primary grades in accordance with their educational background), subject specialization (i.e., JHS- and SHS-level teachers are assigned to a subject area in accordance with their educational background), and language match (i.e., teachers are assigned to a school in which they can speak the dominant language). However, shortages have often led to teachers being deployed to roles they lack specialization in and to schools where students are fluent in a language the teacher lacks proficiency in.

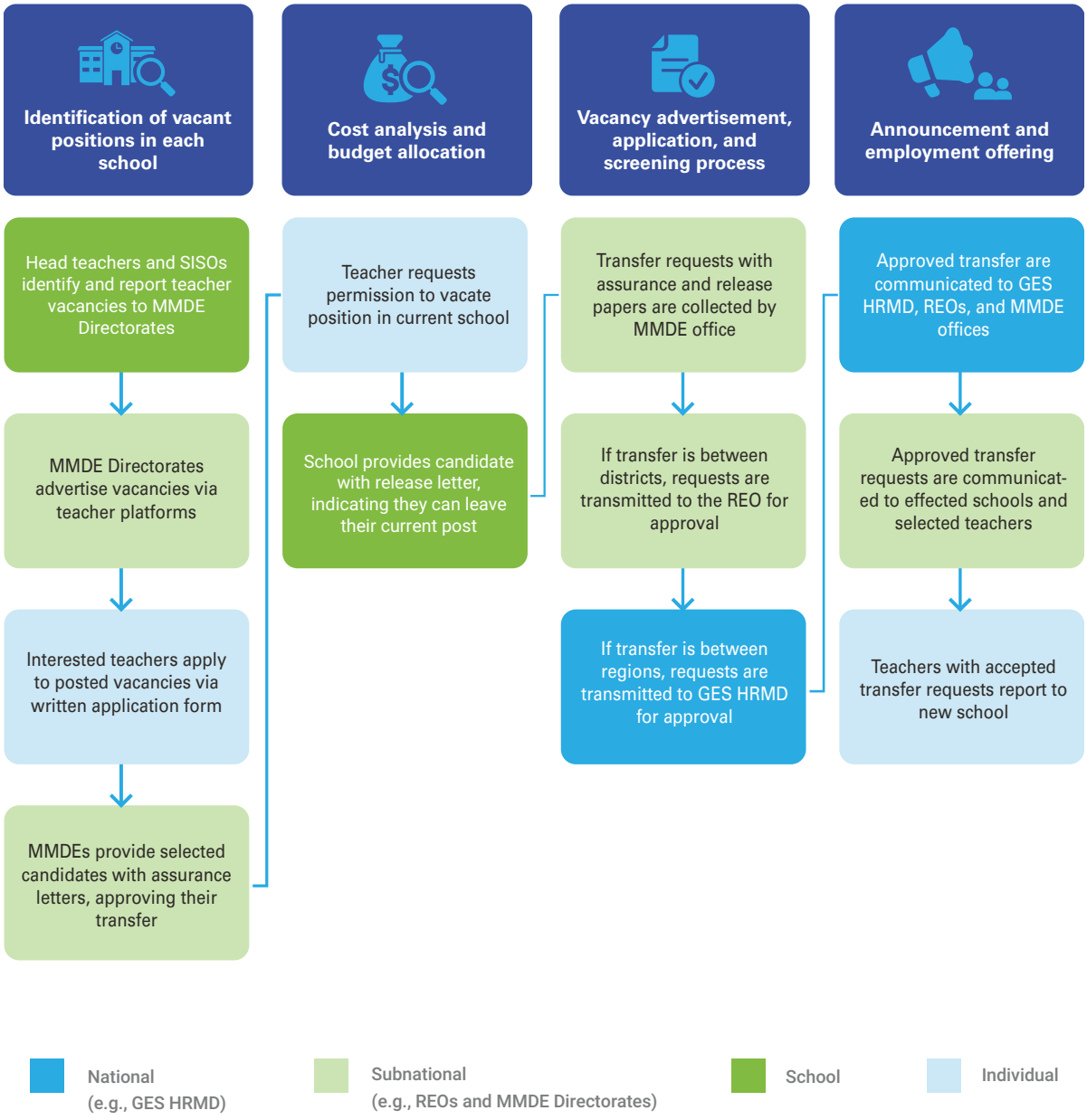
Head teachers have very little agency when it comes to teacher deployment. While head teachers have some say in the teacher transfer or reposting process, they do not decide which teachers are assigned to their schools, as they are assigned centrally. When teachers receive their school assignment, they are also assigned to teach at the primary level (and designated as a 'classroom teacher') or at the JHS level (and designated as a 'subject teacher' and are also assigned to their specific subject). Unlike subject teachers that are assigned to a specific subject prior to arriving to their school, classroom teachers are not assigned to specific grades. Head teachers decide what grades to assign classroom teachers. Currently, there are no directives or guidelines to support head teachers in making these assignments.

While formal induction and orientation for newly posted teachers are recommended, many MMDE Directorates and schools lack the resources to facilitate a high-quality orientation upon teachers' arrival. Some schools and MMDE Directorates organize such orientations using discretionary funds, and other schools have organized low-cost mentorship programmes between new and experienced teachers. In other cases, teachers' unions have led their own orientations for newly deployed teachers. Teachers begin a one-year probation period upon starting at their first school. After their probationary year, teachers become 'confirmed' and gain greater access to professional development opportunities.

Transfers and reposting of teachers

This subsection focuses on the process of active teachers – those currently holding a posting at a government school in the Ghana education system – transferring schools. This is a key lever for filling teacher vacancies in schools, and it needs to move in coordination with the deployment of newly qualified teachers. The key steps of the teacher transfer process are summarized in *Figure 3*.

Figure 3: Ghana teacher transfer process at the basic level



Source: Authors

Notes: Transfers are managed differently depending on if the teacher is requesting to transfer schools within a district (typically called a 'reposting' instead of a 'transfer'), between districts within the same region, or between districts in different regions. For example, reposting does not require approval from GES headquarters, but from Regional Directorates. Typically, inter-district transfers are used first to satisfy postings, then inter-region, and then intra-region, with remaining vacancies satisfied by first deployments.

There are two types of teacher transfers in Ghana. Firstly, transfers can be initiated by GES management at the headquarters, REO or MMDE Directorate level. GES management may initiate a transfer of staff for several reasons, including disciplinary issues, mismatch in expertise, to support a teacher's career progression, etc.[9] Some decentralized education directors may use transfers to improve the equity of teacher deployment, but also to serve local power interests (Epstein et al., 2019). Secondly, teachers themselves can initiate their own transfer. In the past, the Ghanaian MoE has released guidance that teachers should transfer schools every five years, but such guidance does not appear to be strictly adhered to, which represents a major gap in the regulation.

When MMDE Directorates have identified vacancies across their respective schools, many will advertise such vacancies on informal teacher platforms on communication channels such as WhatsApp and Telegram. Under the forthcoming GES-MIS, all vacancies will be posted on a single, accessible platform that all education actors can view easily.

The transfer of teachers is a multistage process that usually requires approvals from both central and decentralized actors. Currently active teachers that would like to transfer to another school that has declared a vacancy are required to solicit an assurance letter, or written approval, from the said school. To do so, such teachers must apply to the school's vacancy post (indicating their teaching experience and subject expertise, language competencies, professional and academic qualifications, and justifying their reason for wanting to transfer) using a standardized, written application form. The school in question can then indicate their approval for their desired candidate by drafting an assurance letter. The selected teacher is then required to seek permission from their current school to vacate their post. Said teachers are responsible for providing their current school with the acquired assurance letter and, if their current school approves, have a release letter drafted.[10] GES is responsible for reviewing requested transfers and subsequently releasing teachers whose transfers are approved.

9 While REOs and MMDE Directorates may transfer teachers due to disciplinary reasons, GES has discouraged this in recent years.

10 A new law mandates that schools must approve all release requests form their teachers wishing to transfer.

Some transfer requests receive priority over others. When determining which transfer candidates to accept, MMDE Directorates tend to evaluate their teaching experience, subject expertise (if any), language match, academic and professional qualifications, and reason for relocating. There is no guidance provided or policies dictating how teacher transfer candidates are selected. REO and GES headquarters' decisions to approve transfers tend to be influenced by how long teachers have served within the public school system in total and in their current school. The minimum period for teachers to be eligible for a reposting or transfer is three years of continuous service in urban areas or two years in deprived or underserved areas (with the MoE encouraging their decentralized administration to transfer teachers after every five years of service in the same school). Additional considerations are made if transfer requests are motivated by a health, marital or family reason. Again, there is minimal guidance provided or policies dictating how teacher transfers should be considered and approved.

If initiated by GES, teachers are provided with a transfer grant to facilitate their relocation if transitioning to an area at least 50 kilometres away from their current posting. Transfer grants are equivalent to three months of pay in addition to a sum of money based off the distance of the move to be made. Funding constraints can sometimes delay the provision of the transfer grant and, subsequently, the teacher's transition to their new posting.

The MoE's forthcoming ESA revealed certain trends that raise concerns about how teacher transfers are impacting the equity of the education system. However, due to a lack of data availability on transfers, this report will not comment significantly on trends related to teacher transfers in Ghana. According to the most recent ESA (2023), there's been a significant increase in transfers between regions (8,082 in 2022 compared to 4,333 in 2020). Younger teachers (between the ages of 21 and 35 years) are more likely to move between regions: only representing 34 per cent of the teacher workforce, this age band is responsible for over 60 per cent of the transfers.

> *"Movements between regions will affect the teacher supply and hence the PTR in these regions, and should be considered when recruiting teachers as well as identifying possible plausible strategies to fill gaps from a scenario planning perspective."*
>
> Ghana, MoE, forthcoming, p. 147

2.3 Key challenges in teacher deployment

Despite the country's recent investments in the teacher workforce, several challenges continue to constrain the country's ability to achieve a more effective teacher deployment system.

The first is the lack of specific regulation and formal procedures on teacher rationalization and deployment. While a 2019 USAID-supported study found that staff at national, district and school levels often referenced 'policies' or 'procedures', these reported understandings varied widely, and no respondent could identify one comprehensive source or consistent set of policy documents. This suggests that teacher deployment practices are guided by fragmented, and sometimes informal, understandings rather than a coherent policy framework. Findings from key informant interviews and co-creation workshops conducted for this project suggests that teacher recruitment and deployment in Ghana appears to be based on precedent and shared norms but is not backed by a legal framework or policy. This creates opportunities for individual discretion and political interference, and it signals a lack of transparency and accountability.

Moreover, teacher management data in Ghana remains fragmented. It is characterized by multiple data systems that are not fully aligned and often produce inconsistent figures. As a result, there is no single, coherent and reliable evidence base to inform decisions on teacher rationalization and deployment. In practice, the GES increasingly relies on data from the GES-MIS database (currently being scaled across a growing number of public basic schools) while the MoE primarily uses data from the national EMIS. Differences in coverage, definitions, update cycles and validation processes between these two systems mean that the same indicators (e.g., teacher vacancies, postings or school-level staffing profiles) may not align across datasets. This lack of consistency creates misalignment between policy

and operations – with strategic decisions being informed by one dataset while implementation decisions are guided by another – which undermines effective planning and accountability.

Furthermore, structural weaknesses, data gaps and limited analytical capacity constrain the effective use of EMIS and GES-MIS for teacher management. For example, the absence of a shared unique identifier across EMIS, GES-MIS and the Integrated Personnel and Payroll Database prevents reliable linkage of teacher records across systems, limiting the ability to track teachers' postings, transfers and payroll statuses. Additionally, both systems contain significant data gaps and omissions, including incomplete school coverage and the lack of critical variables (such as teacher language proficiency and pupil language profiles) that are essential for informed deployment decisions. Although staff at decentralized levels can access GES-MIS, the complexity of the data requires advanced data literacy skills, representing a barrier to its full utilization. Therefore, a clear opportunity to improve teacher rationalization and deployment decisions in Ghana lies in strengthening the analytical capacity at both the GES headquarters and decentralized directorates as well as enhancing the integration of different information systems.

Another challenge is that the current teacher deployment process remains insufficiently responsive to school needs, despite GES officials' best efforts. A highly centralized recruitment and posting system – combined with the absence of a nuanced, single source of information on both school requirements and teacher profiles – limits the ability of school leadership to meaningfully influence teacher selection. Once schools identify a vacancy (whether general or subject-specific at the JHS level), teachers are typically assigned from a central roster, often without sufficient consideration of school-level needs or teacher characteristics. In practice, this can result in mismatches between assigned teachers and schools' instructional requirements, including misalignment in subject specialization and the language competencies needed.

These deployment mismatches are particularly evident in relation to LOI. According to data collected in 2017, almost half of lower primary school classrooms in Ghana are estimated to have teachers and/or pupils who do not feel confident speaking their school's official LOI. The country's linguistic diversity compounds challenges in the teacher deployment system. It is assumed that every teacher in Ghana should be able to speak one or more

of the local languages of their school community, but reality can be different (*see Box 3)*. As teachers are centrally allocated and their language skills are not yet effectively factored into the deployment process, new educators are often deployed to teach in classrooms in which they do not speak or read the official LOI and the language of students.

There is a clear disconnect between the policy framework governing LOI and that guiding teacher deployment. Stronger alignment is needed to enable teachers to provide stronger instruction and support for children's acquisition of foundational literacy and numeracy skills. One of the intentions of the 'self-posting' teacher recruitment approach piloted in the 2024/25 academic year was to enable teacher candidates to only apply for vacancies in locations in which they share a common language. However, this issue was reiterated by GES decentralized staff as a continuing challenge during consultations for this research.

BOX 3

LOI policies in the Ghana basic education system

Although it is not the most widely spoken language nationwide, Ghana recognizes English as its official language. Ghana is a multilingual country with over 80 languages spoken by various ethnic groups. Of the 12 Ghanaian languages that are government-approved for instruction, 11 are currently examined by the West African Examinations Council. The LOI policy in Ghana stipulates that 1 of the 12 Ghanaian languages must serve as the instructional medium for Kindergarten 1 through Primary 3, while English serves as the main LOI for Primary 4 onwards. English is incorporated as a subject in the lower primary grades, whereas Ghanaian languages are taught as subjects from Primary 4 through SHS. Instruction at the primary level in Indigenous languages is limited to the 11 government-supported languages, which include Akuapem Twi, Asante Twi, Fante, Nzema (Akan ethnic languages), Dagaare and Dagbanli (Mole-Dagbani ethnic languages), Ewe, Dangme, Ga, Gonja, and Kasem (Epstein et al., 2019).

Ghana has faced challenges in ensuring teachers are deployed to schools in which they have sufficient competency over the preferred LOI. Despite widespread support for the LOI policy, several factors impede efforts to achieve language match: a lack of clarity and detail in the LOI policy, competing government priorities, lack of qualified teachers proficient in the target LOI, mismatch between the GES-approved language and the community language, insufficient teaching and learning materials in the LOI, and lack of data on pupil and teacher language proficiencies (Epstein et al., 2019). The LOI policy is not effectively cross-referenced nor

sufficiently integrated into other policies, guidelines and directives put out by the MOE and GES about teacher rationalization, deployment, recruitment and retention, which complicates LOI policy implementation (Epstein et al., 2019). Language match is likely competing with other priorities within the government, and some policies and directives have overlooked or purposely outranked the goal of language match.

The lack of data on teacher and pupil language proficiencies limits national and district officials from addressing language match challenges. Language match measures the extent to which teacher and pupil language abilities match the official Ghanaian LOI designated for their school. The MoE currently does not have a system for collecting data on and monitoring language match. Temporarily, data can be pulled from non-government-collected sources; however, these data do not cover all schools and are not adequately tailored to MoE and GES needs. There is a need for additional research into issues of language match in country's education system. Specifically, the Government of Ghana would benefit from knowing to what extent language match issues stem from challenges with recruitment (i.e., whether there are enough teachers with specific language abilities to meet demand) and/or from inefficiencies in deployment (i.e., whether teachers are deployed to the right schools to align with their specific language skills).

Another challenge arises from weaknesses in teacher recruitment and transfer processes which, despite being centralized to improve efficiency, still reduce effective instructional time. The multiple layers of communication and coordination required across different levels of the education system to fill teacher vacancies can lead to delays in the annual teacher deployment timeline. Teachers have reported experiencing significant waiting periods before receiving their initial school postings or confirmation of transfer requests (Ampofo and Yamoah, 2025). Some schools are, resultingly, forced to delay the start of the academic year due to late teacher postings. One area that continues to pose challenges is the teacher transfer process, which can contribute to inefficiencies, resource wastage and equity concerns. The multiplicity of approvals required to fulfil vacancies through transfers means school leaders often, after providing assurances, plan on receiving teachers whose releases are eventually rejected. Additionally, because the responsibility for initiating and managing transfers largely falls on individual preferences and actions, those with greater financial means or stronger professional networks may find it easier to identify vacancies and navigate the process. This dynamic may inadvertently disadvantage teachers with fewer resources, limited access to information or less developed social skills.

One last point refers to teacher preparation and professional development. Despite recent investments, teachers are not adequately prepared nor sufficiently supported to teach in classrooms. The ESP 2018–2030 points to the lack of training, support and capacity-building for teachers as key barriers to quality learning. Pre-service teacher education methods are outdated, highly focused on examinations and minimally focused on relevant pedagogical skills, with in-service continuous professional development activities also lacking (Ghana, MoE, 2019). Relatedly, the pass rate of the Ghana Teacher Licensure Examination (GTLE) has declined in recent years, reaching a peak in 2019 with a pass rate of 78.4 per cent and recently dropping to 16.5 per cent in 2023 (Ghana, MoE, forthcoming). A body of evidence – including classroom observation data from Data Must Speak research,[11] co-created by the MoE and United Nations Children's Fund (UNICEF) – indicates that instruction in Ghana is predominantly teacher-centred, lacks regular formative assessment of student understanding and fails to engage students in the learning process (Osei-Asibey et al., 2020; Graham et al., 2021; Asare and Afriyie, 2023; UNICEF Innocenti et al., 2024). Studies have also found that teachers in Ghana are frequently absent and, when in the classroom, have demonstrated poor time-on-task, further disrupting student learning (Ghana, MoE, 2019; Akseer and Játiva, 2021).

11 This initiative can be engaged with on the UNICEF website (https://www.unicef.org/innocenti/reports/data-must-speak-ghana).

CHAPTER 3

Key findings

This section presents findings from quantitative analyses of teacher deployment at the basic level using data from the Ghana EMIS and learning assessment databases.

As the Ghana MoE and GES does not engage in teacher deployment and management matters with private schools, the findings presented only pertain to public basic schools, unless otherwise stated.[12]

For this report, teachers are defined as school-level staff with classroom-teaching assignments at the kindergarten, primary and/or JHS levels. This would, for example, exclude all administrative staff and head teachers that are not assigned to a subject and/or grade.

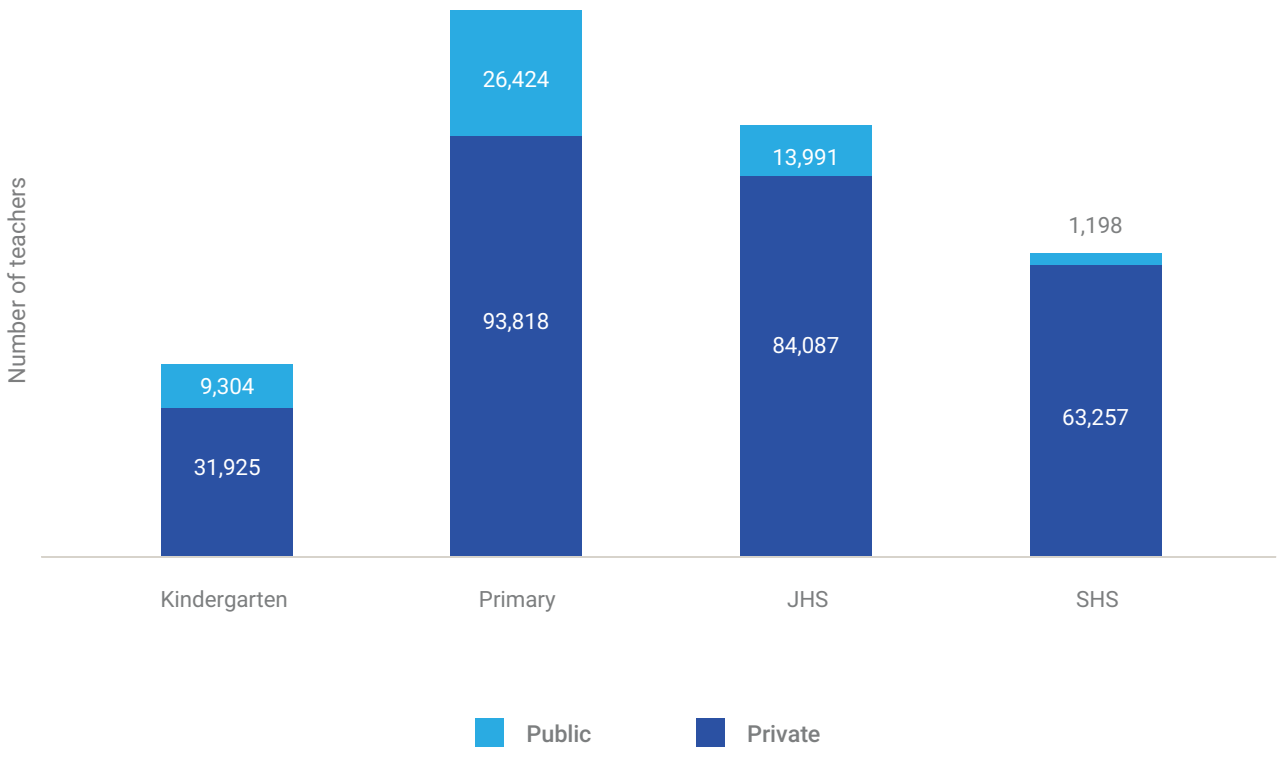
12 Consultations conducted for this research revealed that private sector data can go underreported in the EMIS, sometimes caused by the lack of comparable data and data categories between public and private schools.

Characteristics of the teaching workforce

3.1 Demographic and qualifications overview

As of the 2022/23 academic year, there were 324,004 pre-tertiary teachers employed in Ghana across public and private schools, excluding nursery teachers (Ghana, MoE, forthcoming; *see Figure 4*). The majority of these teachers are concentrated at the primary (120,242) and JHS (98,078) levels, reflecting the relatively large size of the basic education system. A smaller share are working at the kindergarten level (41,229) and at the SHS level (64,455). Across all levels, most teachers are employed in the public sector, with private-sector representation declining sharply at higher levels of education, from 23 per cent at the kindergarten level and 22 per cent at the primary level, to just 2 per cent at the SHS level.

Figure 4: Number of teachers by school ownership and education level, 2022/23



Source: Authors' calculation from EMIS 2022/23

Statistics drawn from EMIS data from the 2022/23 academic year provide a profile of the teacher population in Ghana.[13] Key takeaways from this data, inclusive of only public teachers, are summarized in *Figure 5* and include the following:

1. The distribution of men and women teachers varies significantly by education level, with the proportion of women decreasing with increasing grade levels. As of the 2022/23 academic year, there were significantly fewer female teachers at the JHS level (32 per cent) compared with the primary level (50 per cent; *see Figure 5A*). Even with over 82,000 new teachers having been recruited between 2018 and 2023, this trend has remained consistent. Women teachers constitute the vast majority of the teaching force at the kindergarten level, where 88 per cent of teachers were women. Representation is particularly low at the SHS level, where only 24 per cent of teachers were women as of 2021 (UNESCO Institute for Statistics, n.d.).

2. Almost all (99.7 per cent) basic teachers are full-time employees, with minimal differences between the kindergarten, primary and JHS levels. Across all levels, less than 1 per cent of teachers are on part-time contracts. The EMIS also reports that volunteer teachers and community teaching assistants make up less than 1 per cent of the teaching force, however it is likely that schools underreport the presence of these educators due to their informal status (Saraogi et al., 2017; Custer et al., 2018; Crouch 2019). An even smaller proportion of teachers are teacher candidates registered either under the National Service Authority[14] or the National Youth Employment Program,[15] typically serving as classroom teaching assistants.

13 Prior to the 2022/23 academic year, demographic and professional data on teachers (age, subject and grade assignments, years of teaching experience, qualifications, etc.) were collected and reported annually by head teachers. Even currently, head teachers are responsible for reporting the number of men and women teachers employed at the school during annual EMIS data collection activities. However, since the 2022/23 academic year, teachers have been required to report their own, more detailed, demographic and professional data for the EMIS database. While shifting reporting responsibilities from head teachers to teachers is believed to improve the accuracy of such data, it also increases the risk of (i) such data being subject to human error during data entry and (ii) certain teachers' data going unreported if they are absent during data collection. Therefore, while more granular information on Ghanaian teachers exists, it is only available for 98 per cent of all teachers reported in the 2022/23 EMIS.

14 The National Service Authority is a programme under the MoE that is mandated to deploy graduates of tertiary institutions to support the development efforts of both the public and private sectors in Ghana. Although it is a requirement for all Ghanaian citizens aged 18 and above to contribute to these development efforts, this is currently only implemented for those graduating from tertiary educational institutions.

15 The National Youth Employment Program is a Ghanaian government initiative launched in 2006 to reduce youth unemployment by providing temporary public-sector employment and practical skills training for young people aged 18–35 years, with a focus on postnational service personnel.

3. Only 53 per cent of all teachers hold a bachelor's degree, the minimum qualification to teach at the basic level, or a higher qualification.[16] In the 2022/23 academic year, compliance with this standard was highest among JHS teachers (63 per cent), with less than half of primary teachers (46 per cent) and kindergarten teachers (45 per cent) having at least a degree (*see Figure 5B*). By contrast, nearly all teachers (98 per cent at the primary level and 99 per cent at the JHS level) hold at least a diploma, which was the previous minimum qualification for teaching. This pattern suggests that a substantial proportion of teachers who were considered qualified under the earlier regulatory framework did not upgrade their credentials following the introduction of the degree requirement.

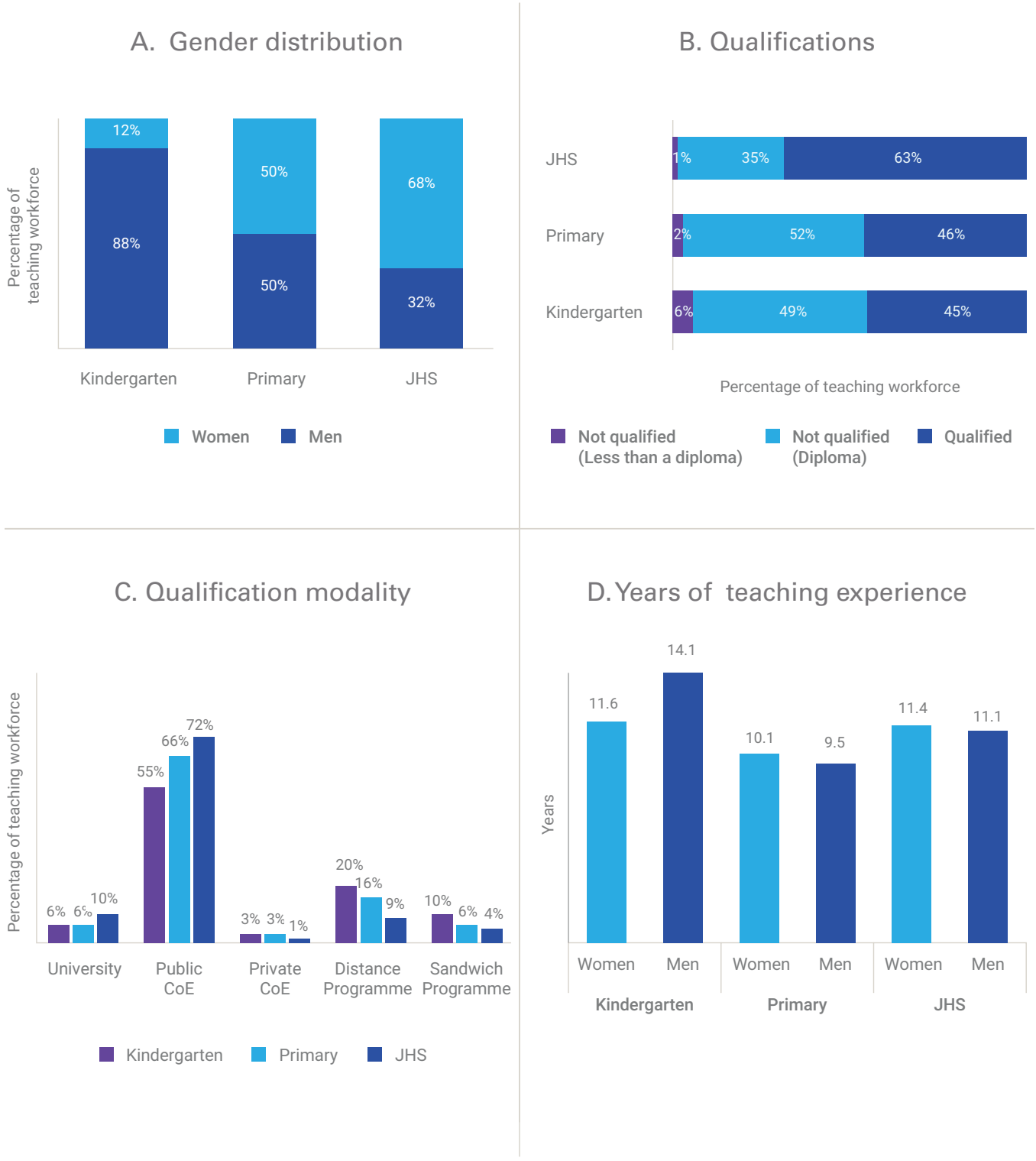
4. About two thirds of all basic teachers were trained at a CoE. As of the 2022/23 academic year, 67 per cent of basic teachers had received their qualifications from a CoE (*see Figure 5C*). Comparatively, 14 per cent received their qualifications through a distance education programme, 6 per cent through a sandwich programme and 2 per cent through a private institution (see Annex 1 for more information). Compared to primary teachers, JHS teachers are more likely to have received their qualification from a university (10 per cent for JHS teachers compared to 6 per cent for primary teachers), or public CoE (72 per cent for JHS teachers compared to 66 per cent for primary teachers). The comparative quality of these various pathways to teacher qualification has yet to be evaluated, with the Statistics, Research, Information and Monitoring unit at MoE currently conducting research on the topic.

5. Within the current pool of educators at the basic level, teachers have about 10.7 years of teaching experience on average. Teachers at the JHS level tend to have served slightly longer within the education system, with the average JHS teacher having 11.2 years of teaching experience, compared to primary teachers that tend to have only served 9.8 (*see Figure 5D*). This pattern is broadly consistent with differences in teachers' average age across levels: JHS teachers are older on average (36.7 years) than primary teachers (34.9 years). Teaching experience does not differ significantly between men and women teachers except for at the kindergarten level, where men have served about 2.5 more years in the

16 Ghana recognizes two forms of teacher qualifications. Teachers typically either have an 'academic qualification' (a degree or certificate that is non-teaching related) or a 'professional qualification' (a teaching credential obtained from an accredited teacher training institution), although some may possess both. In 2021, 59 per cent and 64 per cent of primary and JHS teachers held an academic qualification, respectively, while only 40 per cent and 36 per cent had professional qualifications. As is the process for the MoE, teachers are considered as 'qualified' in this report as long as they hold a degree or higher qualification, regardless of if that qualification is academic or professional.

teaching profession than women, on average. On average, basic teachers have been posted at their current school for about 4.9 years, with minimal differences across education levels.

Figure 5: Demographic and professional profile of teachers in Ghana, 2022/23



Source: Authors' calculation from EMIS 2022/23

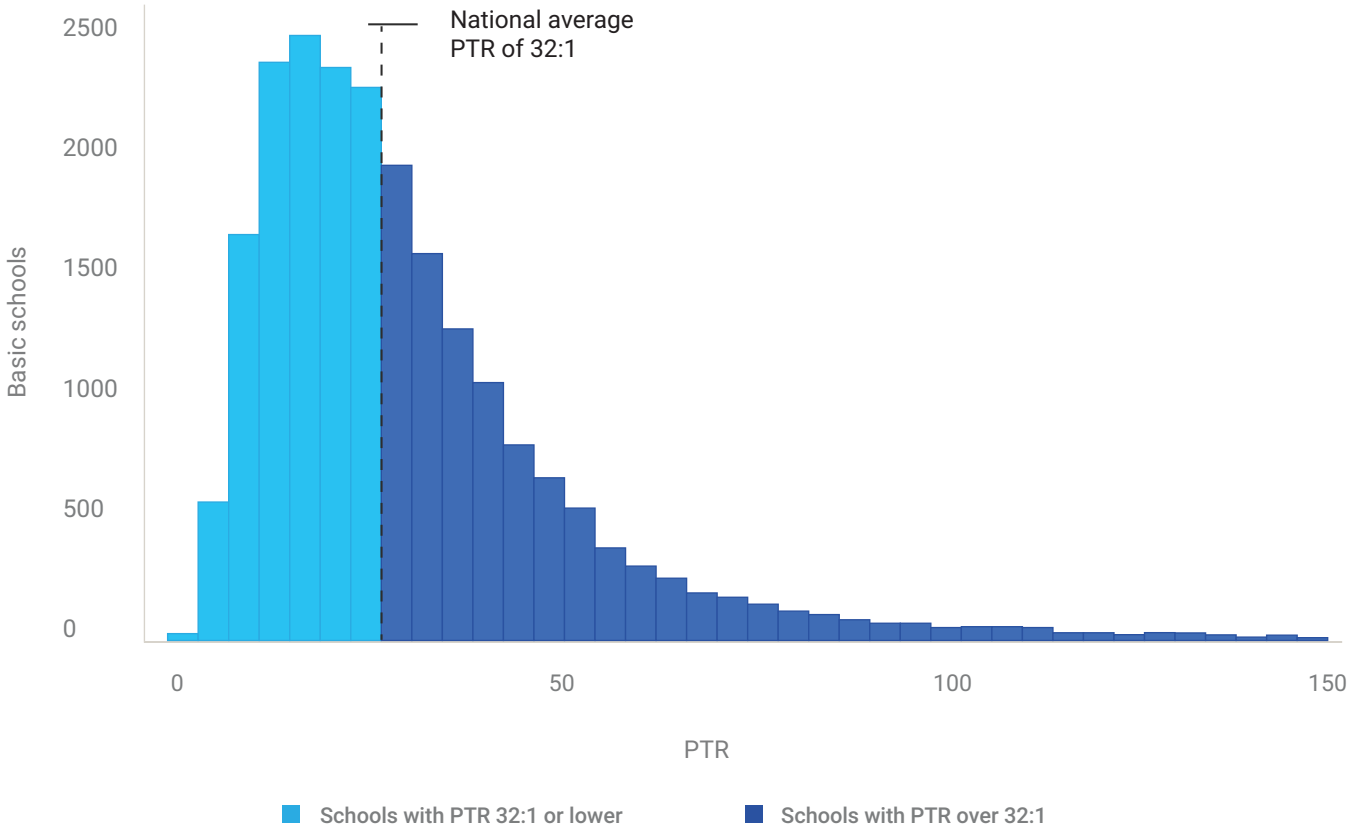
Trends in teacher deployment from across the country

3.2 A moderate national PTR masks regional variation

Across all public basic schools in Ghana, the national average PTR was relatively low, at 32:1 in the 2022/23 academic year.

However, the national average PTR provides a limited window to assess the situation of teacher allocation, concealing variation across territories and schools. For instance, while the national mean PTR was 32:1, about 14 per cent of basic schools were above 50:1, reflecting serious teacher shortages. On the other hand, 45 per cent had a PTR below 25:1, reflecting the opposite scenario (*see Figure 6*).

Figure 6: Distribution of PTRs across public basic schools, 2022/23



Source: Authors' calculation from EMIS 2022/23

Notes: The histogram illustrates the variation in PTR across basic schools in the 2022/23 academic year, with a vertical reference line at the national average PTR of 32:1.

PTRs vary substantially across Ghana, indicating uneven distribution of the teaching workforce. This heterogeneity is reflected in the standard deviation of PTRs, a metric capturing the spread of PTR values from the mean. The standard deviation reached 21.3 in the 2022/23 academic year, signalling wide dispersion of PTR values across schools nationwide. While many schools operate with PTRs below national and international benchmarks,[17] others face significant teacher shortages. This uneven distribution underscores the need to further examine territorial teacher redistribution as a strategy to optimize deployment and improve equity in staffing across the country.

When accounting for teachers' qualifications, the average ratio of students to qualified teachers (QPTR) in Ghanaian basic schools increases to almost double the general metric, at 60:1. It is important to note that this metric is based on the new qualification for basic schoolteachers introduced by the MoE in 2018 (i.e., a degree). If the same indicator is calculated based on the previous qualification standard (i.e., a diploma), then the national average QPTR is 33:1, closer to the national PTR, showing that the new qualification standards have yet to be fully internalized. Progress toward full compliance of the new standards requires further enforcements and targeted incentives to support in-service teachers in upgrading their qualifications.

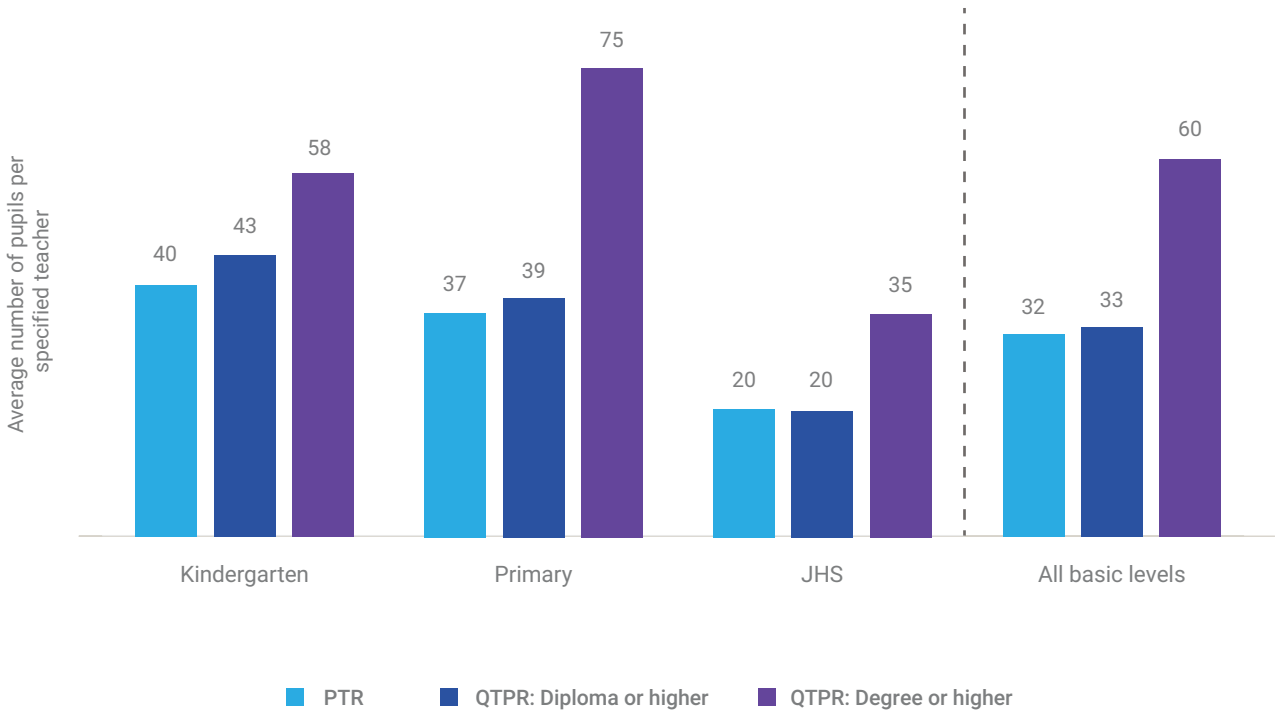
When the analysis takes into consideration the variation of PTRs and QPTRs by education level, additional features appear, as shown in *Figure 7*, and detailed below:

1. In kindergarten, there are approximately 40 pupils per teacher on average. However, when only qualified teachers are considered, the ratio rises to 58:1, indicating a substantial shortage of qualified kindergarten teachers.
2. The average PTR at the primary level is 37:1, while the QPTR reaches 75:1. This sharp increase highlights a particularly severe shortage of qualified teachers at the primary level, greater than at the kindergarten and JHS levels and above the national average. Given the central role of primary education in building foundational literacy and numeracy skills, this represents a critical challenge for learning outcomes.

17 National PTR targets are outlined in the Ghana ESP 2018–2030, which recommends a ratio of 35:1 at the kindergarten and primary levels and 30:1 at the JHS level. The international benchmark of 40:1 reflects guidance from the GPE, of which Ghana has been a partner country since 2004.

3. At the JHS level, where teachers are assigned to subjects and not grades, the average PTR and QPTR in the 2022/23 academic year were 20:1 and 35:1, respectively. The PTR value is significantly below the MoE target PTR for the JHS level (i.e., 30:1), while the QPTR is slightly higher. However, subject-specific teacher availability remains the more relevant metric for assessing staffing adequacy at this level (see section 3.10).

Figure 7: National average PTR and QPTRs by education level, 2022/23

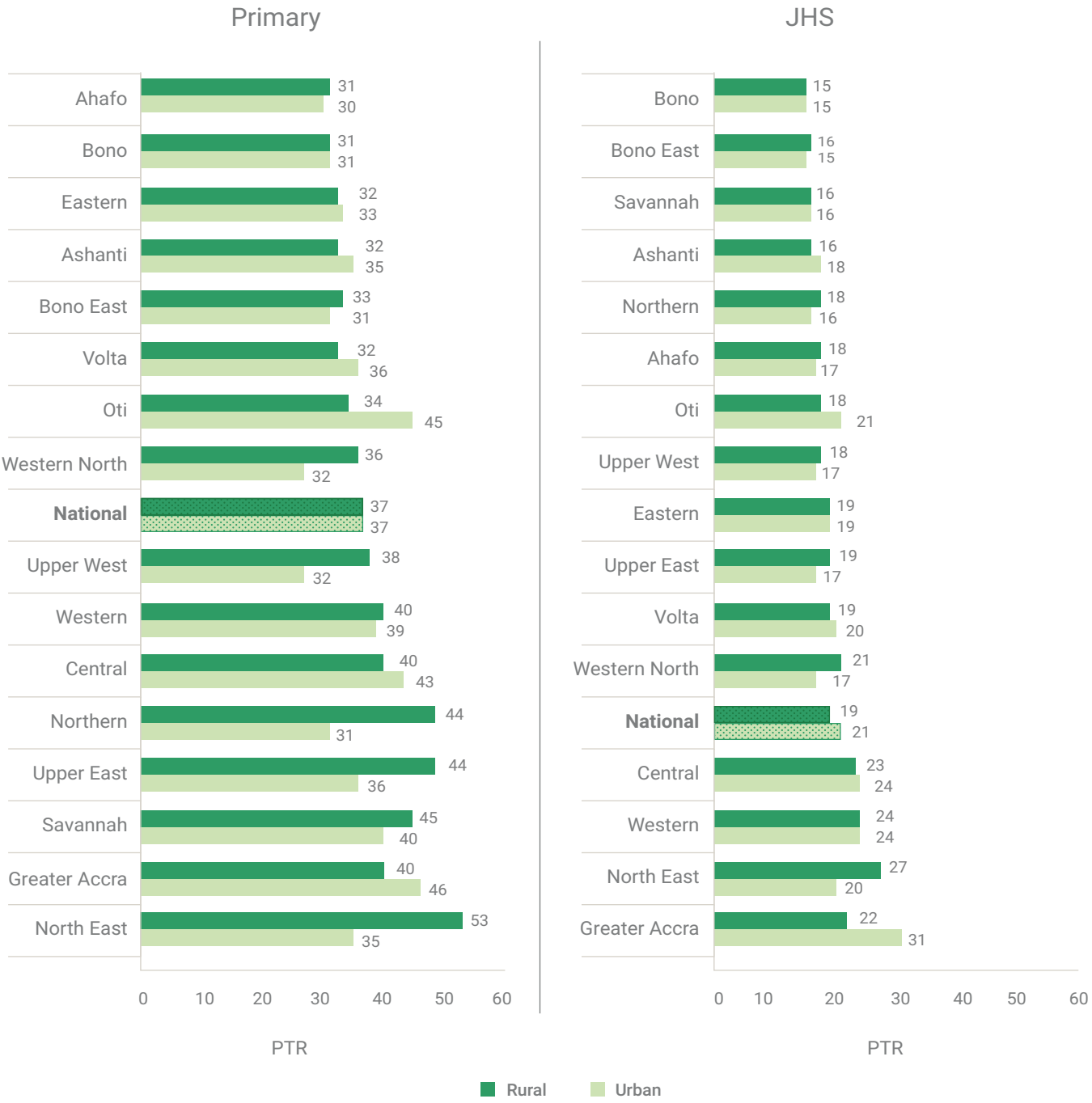


Source: Authors' calculation from EMIS 2022/23

Rural schools experience slightly greater average PTRs than urban schools, although a larger gap is observed if teacher qualifications are considered. In rural basic schools, the average PTR stood at 33:1 in the 2022/23 academic year, while the average QPTR observed was more than double, at 67:1. In urban schools, on the contrary, the average PTR and QPTR values were 29:1 and 43:1, respectively. An important difference also appears when the education cycle is at play. Although the urban and rural PTRs are the same across primary schools (at 37:1 each), both figures decrease at JHS, first to 21:1 across urban schools, and slightly more (to 19:1) across rural ones.

As might be expected, PTR differences are further accentuated when regional factors are also involved. *Figure 8* presents average primary and JHS PTRs across rural and urban schools by region.

Figure 8: Differences in PTR between urban and rural schools by education level and region, 2022/23



Source: Authors' calculation from EMIS 2022/23

Notes: Regions are arranged from top to bottom in ascending order of their average PTR (across both rural and urban schools). Differences in average primary PTR between rural and urban schools were statistically significant at the 5 per cent level ($p < 0.05$) in the regions of Ashanti, Central, Greater Accra, North East, Northern, Oti, Upper East, Upper West and Volta. Differences in average JHS PTR between rural and urban schools were statistically significant at the 5 per cent level ($p < 0.05$) in the regions of Ashanti, Greater Accra and Northern, as well as for the national average.

At the primary level, nine regions exhibit statistically significant rural–urban differences in PTR. In the Ashanti, Central, Greater Accra, Oti and Volta regions, urban primary schools have higher average PTRs than their rural counterparts, suggesting greater overcrowding pressures in more densely populated areas. In contrast, the pattern reverses in the North East, Northern, Upper East and Upper West regions, where rural schools experience higher PTRs than urban schools. The magnitude of these disparities is substantial in some regions. For example, in North East, rural primary schools have an average PTR of 53:1, which is 18 more students per teacher than urban schools, where the average PTR is 35:1.

Differences in the PTRs of urban and rural schools are less significant at the JHS level, but here too some regional variations exist. Only three regions – Ashanti, Greater Accra, and Northern – show statistically significant differences in PTR between rural and urban JHS schools. This difference is greatest in Greater Accra, where urban JHS schools have nine more students per teacher than rural schools.

Teacher recruitment and retention policies have not been sufficiently targeted to address persistent rural teacher shortages. Although the GES periodically conducts teacher recruitment drives, historically these efforts have been limited and do not explicitly target rural areas, hindering their effectiveness in addressing persistent teacher shortages in these communities. Relatedly, while some national and local solutions have arisen to address the high turnover of teachers in rural areas (*see Box 4)*, the education system still needs more sustainable options for improving the equity of teacher deployment across the country.

BOX 4

National and local solutions for overcoming teacher shortages in rural schools

Schools in rural and difficult-to-staff areas find it hard to attract teachers, and appointees frequently refuse or delay compliance with school assignments. Living standards between urban and rural areas in Ghana vary immensely, impacting teachers' deployment decisions. Teacher turnover is particularly high in the country's rural areas where conditions such as inadequate housing, limited infrastructure and minimal access to career development opportunities are major deterrents (Epstein et al., 2019; Salifu, 2020; Opoku-Asare et al., 2022; Ampofo and Yamoah, 2025). These factors result in a significant imbalance, with rural areas consistently being unable to fill vacancies when newly recruited teachers fail to show up, and urban areas attracting and retaining more qualified teachers. Newly deployed teachers in Ghana are often not provided support for their relocation, making it difficult for teachers to move across substantial distances, to find suitable housing and to settle in new communities. Without a pertinent retention strategy, this issue remains unresolved, exacerbating the shortage of qualified teachers in underserved areas (STIR Education, forthcoming). Due to some teachers being unwilling to accept or stay in postings in deprived areas, pressure is placed on decision-making bodies to interfere with the deployment process (Epstein et al., 2019; Ampofo and Yamoah, 2025).

Resultingly, the MoE is working towards the implementation of a few measures that seek to improve teacher deployment and retention in rural areas. While a positive step forward, these efforts need further assessment to better understand effectiveness and potential implementation gaps:

1. The Ghanaian government has recently announced its readiness to implement the Deprived Area Allowance, an initiative aimed at motivating teachers to accept postings to underserved areas. For many years, the GES has advocated for a policy whereby teachers who accept posting or are transferred to areas designated as 'deprived' are eligible to receive a salary top-up of up to 20 per cent of their gross monthly income. Due to a combination of budgetary constraints and concerns for sustainability and equity, the implementation of this measure has been delayed, although recent messaging from the government has signalled that they may soon be instituted. The news has raised concerns among teachers in urban areas who cite spending a significant portion of their salaries on high rent and transportation costs. Furthermore, questions about how the Deprived Area Allowance will be implemented and what areas it will benefit remain to be addressed.

teacher deployment system, in which candidates will indicate their preferences for placement. This would not only enable teacher candidates to assert more agency but may help to better align with factors such as language matching or teachers' communities of origin, or even contribute to reducing turnover in rural regions. It is essential to align this measure with targeted incentive policies for remote areas in order to mitigate the risk of disproportionate demand for positions in urban locations.

3. Another national policy is being implemented whereby teachers that accept a post in a difficult area may request a reposting to a district of their choice after three years and/or to obtain study leave with pay (World Bank, 2019). While this measure may run counter to teacher retention, it could incentivize greater deployment of new teachers to rural areas. It may be necessary to implement a monitored transition plan to track emerging patterns and prevent short-term distortions.

Retired as of 2016, Ghana previously implemented the UTDBE as a targeted in-service training programme to upgrade the qualifications of untrained teachers, particularly in rural and underserved areas. Rather than removing teachers from classrooms, the UTDBE provided intensive, school-based and distance-supported training to teachers who were already teaching without formal qualifications. In 2004 alone, more than 8,000 unqualified teachers were upgraded through the GPE-financed programme. Evidence suggests that this flexible and context-specific model strengthened the rural teacher pipeline and performed comparably or better than traditional pre-service training routes in terms of deployment to rural schools and teacher retention (Casely-Hayford et al., 2016; Namit, 2017; Opuni, 2025). Given the continued prevalence of unqualified teachers (especially at the kindergarten and primary levels) the MoE and its development partners could explore similar in-service upgrading approaches, with a focus on the most affected rural areas.

Teacher shortages have also driven local solutions. In some rural areas, community accountability structures – such as school management committees or parent–teacher associations – have mobilized funds to hire and pay volunteer teachers to reduce teacher vacancies. While some communities opted to rehire retired teachers, others employed unlicensed SHS and university graduates based in the community. However, reliance on community funding to address teacher shortages raises important equity concerns. Communities in remote areas often face significant budget constraints, meaning that only those with greater financial capacity can sustain such arrangements. Moreover, the use of volunteer teachers, many of whom lack formal training, raises concerns about instructional quality, particularly given the high prevalence of unqualified teachers in Ghana and the even greater concentration of such teachers in rural areas.

PTRs and QPTRs also vary substantially by school ownership, with private schools facing larger class sizes. At the national level, public basic schools experience an average PTR of 32:1 and an average QPTR of 60:1, slightly more than twice as many children per qualified teacher. Private schools, on the other hand consistently show higher figures, with an average PTR of 40:1 and QPTR of 86:1, the gap between which is more than double. At the JHS level, despite having lower average enrolments, private schools have larger class sizes than public schools, with a PTR of 25:1 compared to 20:1 in public schools, and a QPTR of 44:1 compared to 35:1 in the public sector.[18] However, the extent to which these differences are driven by staffing decisions, student enrolment trends or a combination of both is unclear.

3.3 Teacher shortages are concentrated geographically

While the national PTR is relatively low, certain regions – such as those in the north of the country – face relatively larger class sizes. As shown in *Table 1*, the North East (48:1), Savannah (41:1) and Northern (39:1) regions show the highest average PTRs across all education levels at the basic level. Comparatively, the regions of Bono (24:1), Ashanti (26:1) and Ahafo (27:1) have the lowest average PTRs.

18 Rural public schools host about 52 JHS students on average, compared to approximately 37 JHS students in rural private schools. In urban areas, public schools tend to have around 123 JHS students on average, compared to about 52 students in private schools.

Table 1: Average PTRs by region and education level, 2022/23

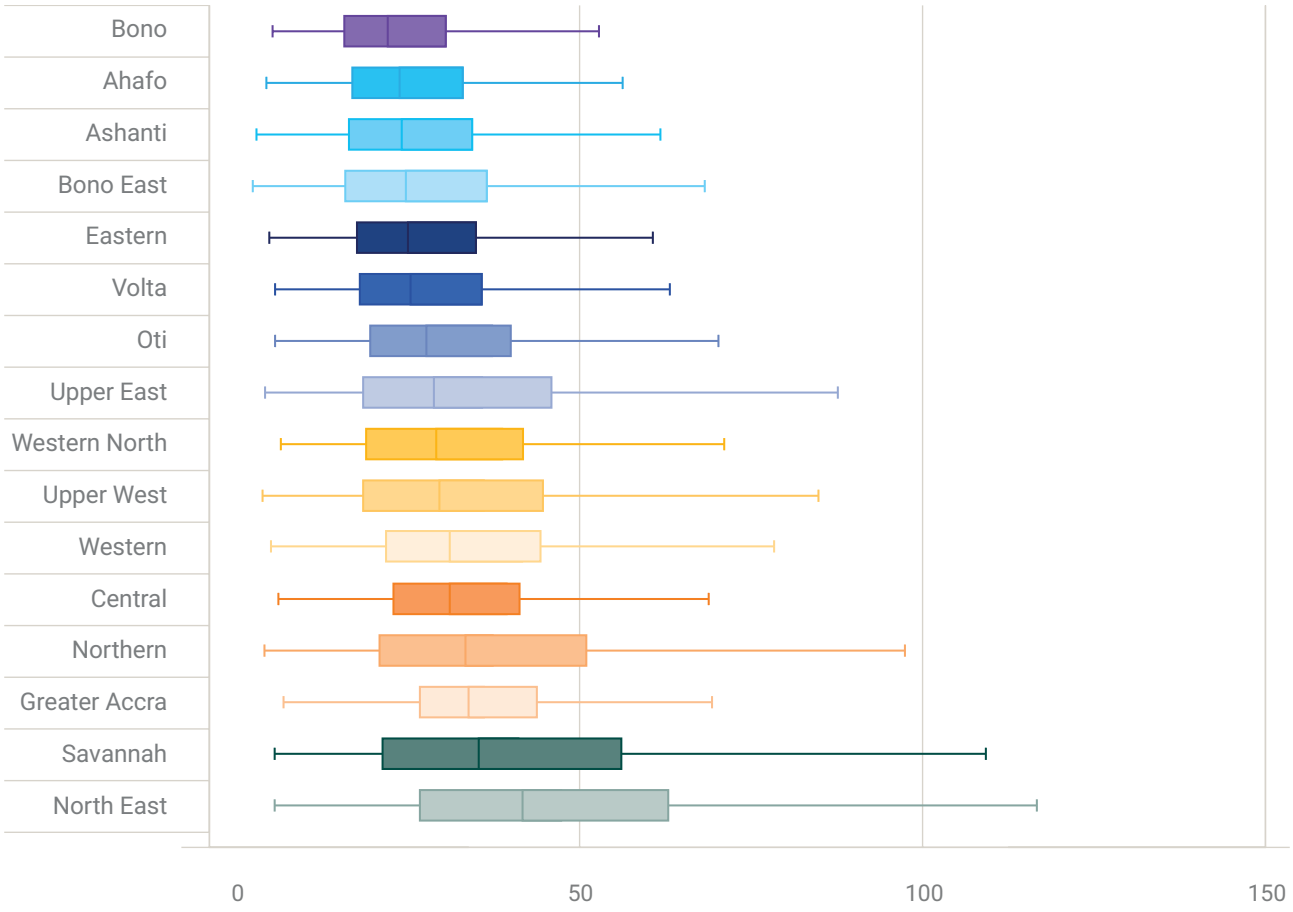
Region	Average PTR			
	All basic education levels	Kindergarten	Primary	JHS
Bono	24	30	31	15
Ashanti	26	35	33	17
Ahafo	27	34	31	18
Eastern	28	31	32	19
Bono East	28	37	33	16
Volta	28	36	33	19
Oti	32	44	34	18
Western North	32	46	35	20
Central	34	41	41	23
Upper East	34	46	43	19
Western	35	42	39	24
Greater Accra	36	39	45	28
Northern	39	50	42	17
Savannah	41	56	44	16
North East	48	64	52	26

Source: Authors' calculation from EMIS 2022/23

Notes: Cell shading represents the relative magnitude of PTRs: Greener shades indicate lower ratios, while yellow, orange and red indicate increasingly higher ratios.

PTRs at the basic education level also vary greatly *within* regions, and once again, certain regions in the North face the greatest variation (*see Figure 9*). For example, in the North East region, while the lowest decile of basic schools (the 10 per cent of the schools in the region with the lowest PTRs) has an average PTR of 16:1, the highest decile (the 10 per cent of the schools in the region with the highest PTRs) has an average PTR of 95:1. This means that while the lowest decile of the PTR distribution is 32 children per teacher below the regional average, the highest decile is 47 children per teacher above, highlighting great inequity in how teachers within the North East region are distributed across schools. Comparatively, in the region of Bono, the lowest decile of schools has an average PTR of 10:1, 14 children per teacher below the regional average, while the highest decile has an average PTR of 43:1, 19 children per teacher above.

Figure 9: Distribution of PTRs in public basic school by region, 2022/23



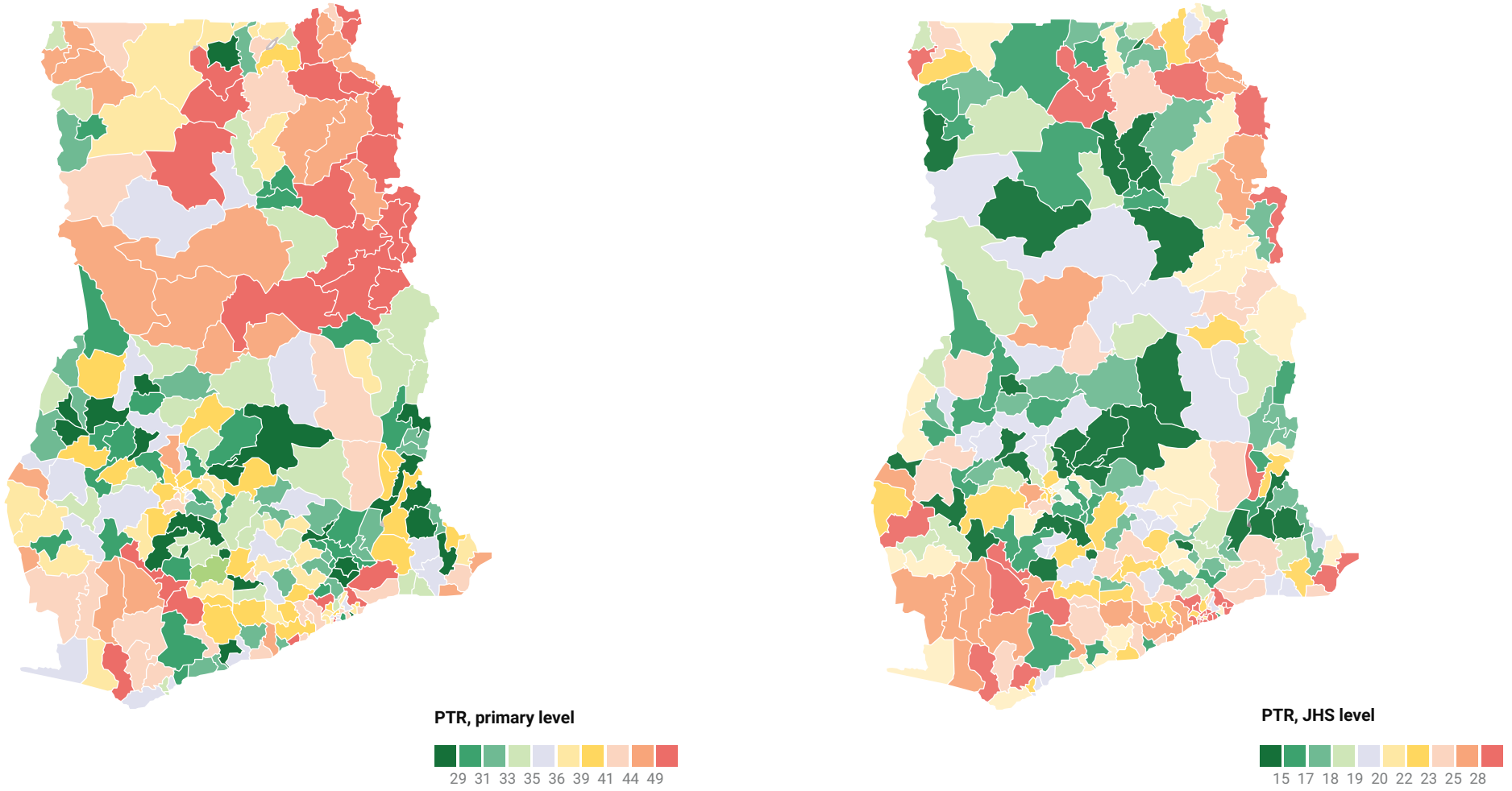
Source: Authors' calculation from EMIS 2022/23

Notes: A boxplot shows the distribution of PTR values within each region, with the centred box capturing the middle 50 per cent of values (from the 25th to 75th percentile) and the vertical line inside the box representing the median PTR value. The 'whiskers' extend to the minimum and maximum values within a certain range, helping to highlight both central tendencies and within-region variability. Boxplots exclude outliers. Regions are arranged from top to bottom in ascending order of their median PTR values.

Digging deeper, teacher shortages are further concentrated in specific districts. Disaggregating PTRs at the district level provides a more granular understanding of regional teacher shortages, as shown by *Map 1*. The top decile of districts (the districts at the top 10 per cent of the distribution, represented by the darkest orange colours) experience average PTRs of 87:1 at the primary level and 53:1 at the JHS level. These districts – including Mamprugu Moagduri and Chereponi of the North East region, Tatale Sanguli of the Northern region, Nzema East of the Western region, and Tempane of the Upper East region – are represented by the darkest orange colours in *Map 1* and signal areas where policy actions should be prioritized.

More than a third of districts have an average primary PTR greater than 35:1, the MoE target for the primary level. While around 93 per cent of districts in Ghana (244 out of 261 districts) meet the MoE target PTR for JHS classes of 30:1 or below, only 41 per cent of districts (108 districts) meet the MoE target PTR at the primary level of 35:1 or below. These districts are concentrated mostly in the central and northern regions of the country. Furthermore, while average primary PTRs span between 13:1 and 65:1 (a span of 52) at the district level, JHS PTRs range from 6:1 to 41:1 (a span of 35).

Map 1: PTR at the primary (left) and JHS (right) levels by district, 2022/23



Source: Authors' calculation from EMIS 2022/23

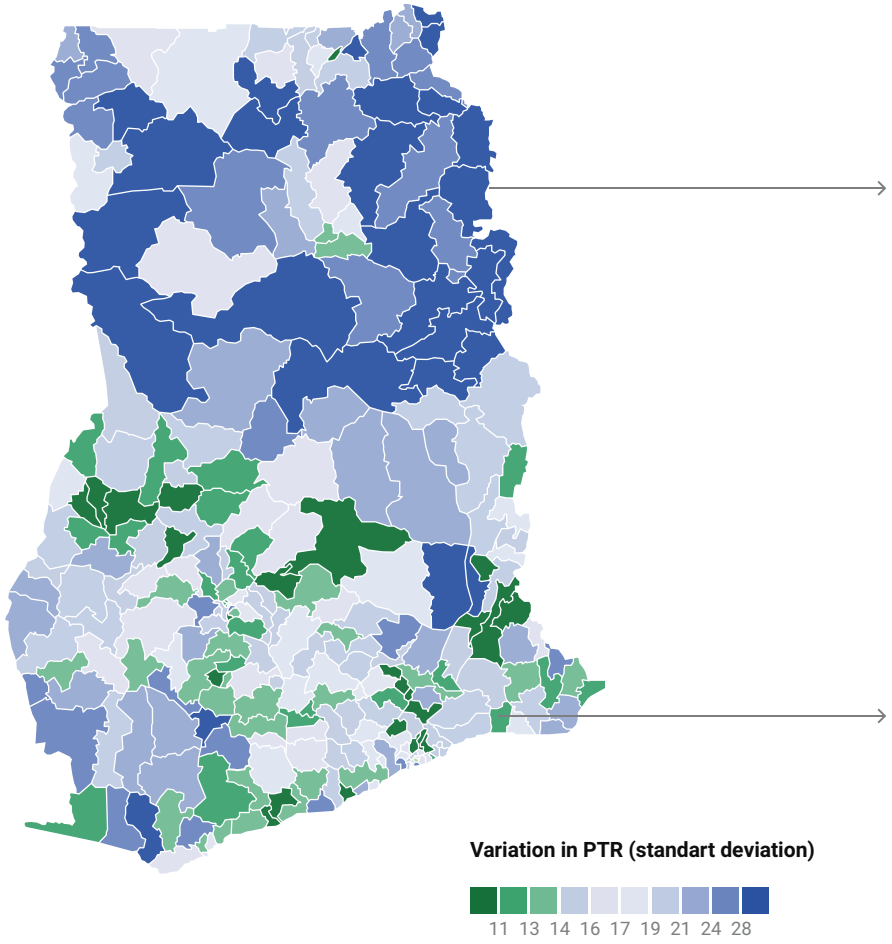
Notes: A darker orange colour indicates a larger average PTR, whereas a darker green colour indicates a smaller average PTR. The maps only include public schools. This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers

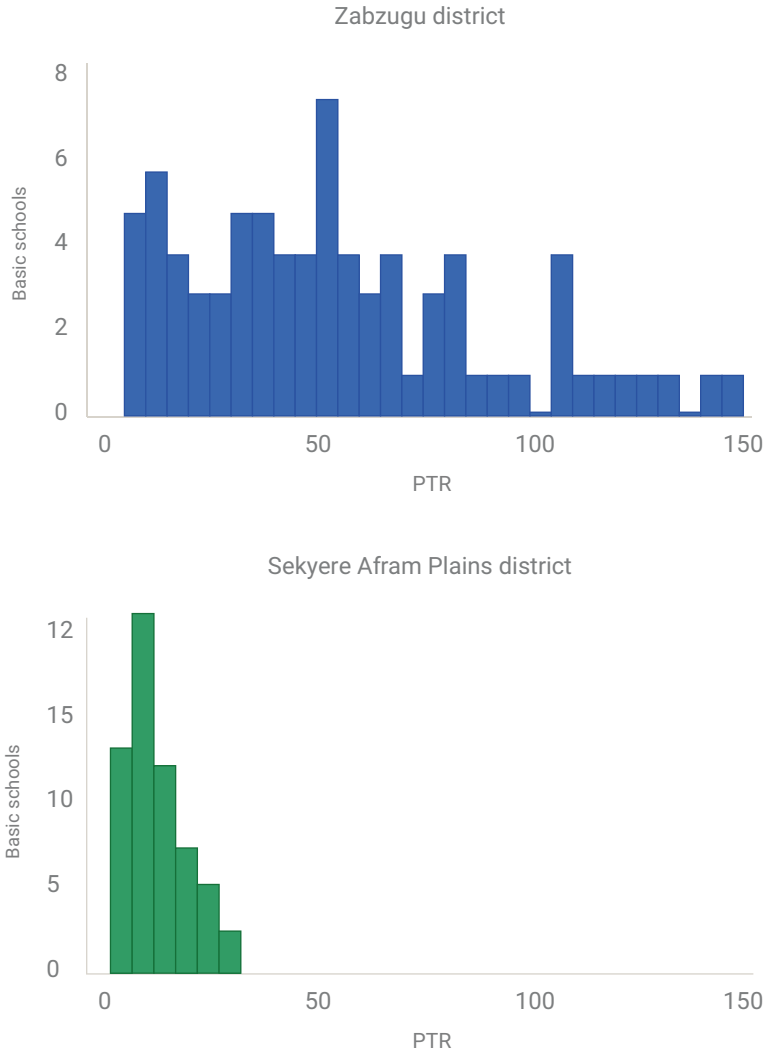
In addition to differences between districts, exploring the geographical variation of teacher shortages inside districts shows interesting patterns. Most districts in Ghana experience an unbalanced distribution of teachers across schools. This imbalance is reflected in the variation of PTRs within districts, measured by standard deviation. Districts with high variation tend to have a mix of schools with either very high or very low PTRs compared to the average, signalling inequity patterns. Nationally, about 15 per cent of districts have a PTR standard deviation above 25, and more than a third exceed 20.

Map 2 visualizes these disparities, with some cases standing out. On one hand, districts like Sekyere Afram Plains (Ashanti region) have a low standard deviation (6.5), showing that school-level PTRs are clustered tightly around the district average with little dispersion. The 60 public basic schools within Sekyere Afram Plains have PTRs ranging from 5:1 to 28:1 (a span of 23). In contrast, the Zabzugu district in the Northern region, with a PTR standard deviation of 35, exhibits a much wider disparity. The PTRs across the 84 public basic schools in Zabzugu range from 5:1 to 148:1, a massive range of 143, highlighting severe inequities, with some schools facing teacher underutilization while others experience oversupply.

The average within-district variation in PTR (18.6 standard deviations) is over twice as large as the between-district variation (8.2 standard deviations). This indicates that teacher distribution differs markedly within district boundaries. It also underscores the need for local actors – such as REOs and MMDE Directorates – to play a critical role in teacher allocation decisions within districts, which is an important lever for policy interventions to enhance equity and efficiency. Despite the broader limitations of administrative data, utilizing more localized analysis can improve decision-making as it can identify areas that have greater relative needs, and can help with better targeting of public resources.

Map 2: Standard deviation in PTR at the basic level by district, 2022/23





Source: Authors' calculation from EMIS 2022/23

Notes: A darker blue colour indicates greater variation, whereas a darker green colour indicates less variation. This is calculated based on the standard deviation within each district. The map only includes public schools. This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers

3.4 Some schools face teacher shortages despite having sufficient PTRs

Ghana faces a puzzling paradox: Despite the government reporting significant teacher shortages, PTR values are relatively low on average. Teacher recruitment targets have not been met for several years. According to the 2018–2030 ESP, around 175,000 more teachers were to be recruited in 2018, and 290,000 more in 2022. However, the actual number of new teachers in the public education system fell short of these targets. In 2018, only about 15,000 teachers out of the targeted 175,000 were recruited. While these figures suggest a significant gap, the national average PTR remains relatively favourable at 32:1.

This phenomenon may, in part, be driven by overly ambitious recruitment targets. This could be explained by issues in data quality, inconsistencies in the projections used for target-setting or recruitment decisions based on broader policy ambitions such as improving the supply of certain subject expertise. Clarifying the rationale behind these targets – why they were established and why they remain unmet – would provide better insights into whether the shortfall reflects a systemic challenge or a misalignment in planning assumptions.

However, the consistently reported teacher shortages may also be partly driven by schools that have sufficient PTRs but lack enough teachers to satisfy all grade and subject requirements. Ghana experiences two distinct types of teacher shortages, a phenomenon that has yet to be clearly articulated in policy and practice. Firstly, there are some schools in Ghana that do not have enough teachers to effectively accommodate all learners and maintain appropriate class sizes, leading to high PTRs and worse learning environments. Secondly, there are other schools that do not have enough teachers to facilitate single-grade or single-subject instruction. For example, this would be a minimum of six teachers at the primary level (one teacher per grade level). Some schools may face both shortages simultaneously, compounding the impact on instructional quality.

To better illustrate these cases, four categories were developed to categorize primary schools, represented in *Figure 10*:

- **Green:** Schools with an overall adequate supply of teachers (if their PTR was 35:1 or lower – i.e., the MoE's target PTR for the primary level) and a sufficient supply of grade-specific teachers (if they had six primary teachers or more, theoretically enabling them to facilitate single-grade instruction if each grade level was assigned at least one teacher)
- **Yellow:** Schools with an overall adequate supply of teachers, but with a shortage of grade-specific teachers (if they had less than six primary teachers, theoretically requiring them to facilitate some form of multigrade instruction)
- **Orange:** Schools with a shortage of teachers in the aggregate (if their PTR was higher than 35:1), but which have a sufficient supply of grade-specific teachers
- **Red:** Schools with a shortage of teachers in the aggregate and with a shortage of grade-specific teachers

Figure 10: Distribution schools by PTR and number of teachers, 2022/23

Source: Authors' calculation from EMIS 2022/23

Notes: Reference lines represent the national PTR target for primary 35:1 (y-axis) and the minimum of six teachers per school (x-axis).

The analysis points to a striking composition. Around 21 per cent of public primary schools in Ghana (corresponding to 3,229) do not have enough teachers to facilitate single-grade instruction but would not be classified as having teacher shortages based on their relatively low PTRs (yellow dots). In most cases, these schools are located in less-populated areas and student enrolments are low, with an average of 91 students. Comparatively, another 25 per cent, or 3,875 schools (red dots), have high PTRs and lack an adequate number of grade-level teachers. Such schools, with 202 students on average, represent a demanding case combining both challenges. In turn, the orange dots represent 20 per cent of the cases (3,111 schools) where there are just enough teachers to assign at least one per grade, but the pupil–teacher ratio remains too high to provide a learning environment that meets national standards. Finally, the green dots represent the best scenario, 33 per cent of schools (5,131) with both indicators meeting standards to enable single-grade instruction and a balanced PTR.

While all four cases are spread across the territory, certain regions show the prevalence of specific patterns. The regions with the greatest proportion of schools that experience high PTRs and less than six teachers at the same time are the North East (49 per cent of all public primary schools facing this double challenge), Savannah (45 per cent) and Upper West (35 per cent). Those having low PTRs but lacking enough teachers to facilitate single-grade instruction are Oti (36 per cent), Volta (32 per cent) and Savannah (31 per cent).

One of the most relevant policy implications from this simultaneous analysis of PTRs and teaching capacity at the school level concerns optimizing multigrade instruction strategies. Schools that lack enough teachers for every grade level but maintain relatively small class sizes are strong candidates for multigrade instruction or similar approaches. In the 2022/23 academic year, 5,182 public basic schools (23.5 per cent) in Ghana were using multigrade teaching across at least two of its provided grade-levels.[19] *Box 5* explores multigrade instruction in greater depth, providing insights on the feasibility of this approach and practical ways to implement it effectively in Ghana.

19 The share of schools reporting using multigrade instruction on the 2022/23 EMIS is higher in rural settings (26.7 per cent) than in urban settings (14.0 per cent). Multigrade instruction is also far more likely to occur at the primary level, where 28.51 per cent of schools reported using multigrade instruction amongst primary grades on the 2022/23 EMIS, whereas only 5.1 per cent of schools with JHS students reported doing the same for JHS grades.

BOX 5

A note on policy options surrounding multigrade instruction

Multigrading is the practice of mixing children of different grade levels in the same classroom. While not always the case, schools most commonly employ multigrade teaching as a strategy for overcoming teacher shortages or accommodating grade levels with few student enrolments. The way multigrade instruction is carried out varies across education systems, schools and even classrooms (Cornish and Taole, 2021). Students assigned to different grade levels can be combined within a single classroom and to a single teacher for the entire duration of the academic year, or just for certain periods, days or semesters. A single teacher with multiple grade cohorts can also spend their day rotating between separate classrooms, instructing one cohort while the other(s) theoretically work independently (Parfitt et al., 2025).

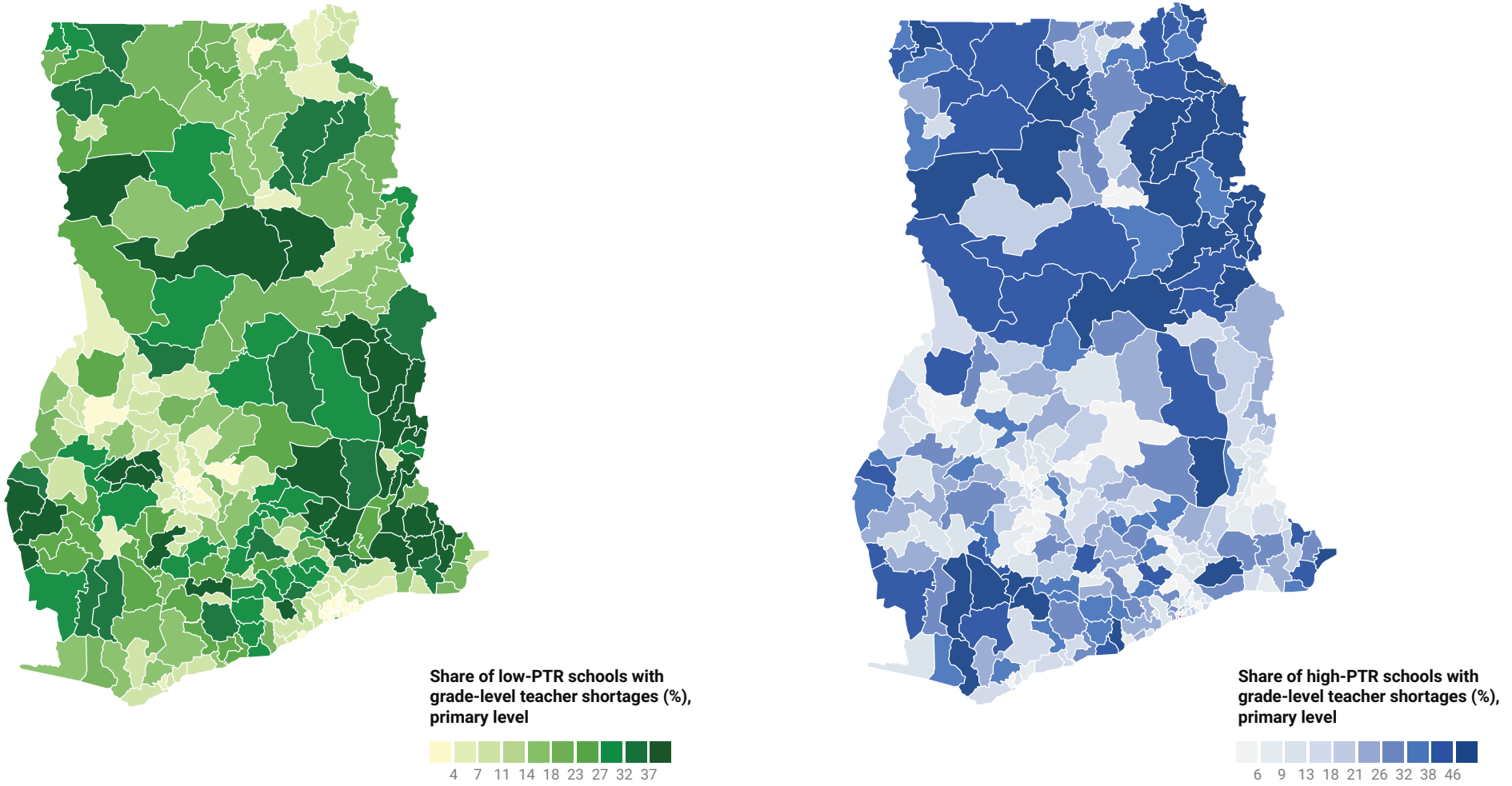
In some contexts, the use of multigrade teaching is part of a planned and organized strategy, while in others, it is an improvised response to teacher shortages (Mulkeen and Higgins, 2009). Multigrade instruction may combine two consecutive grade cohorts in a single classroom or, in some systems, require teachers to manage three or more grade levels simultaneously.

The evidence on the effect of multigrade instruction on learning is mostly inconclusive, with most of the research exclusively focused on high-income contexts (Mason and Burns, 1996; Veenman, 1995; Pratt, 1986). In the case of Ghana, as discussed further below, Grade 2 learners taught in multigrade classrooms perform worse than their peers, although there is no statistically significant difference for Grade 4 students (UNICEF Innocenti et al., 2025). However, more high-quality research on multigrade instruction is emerging, and preliminary findings suggest that multigrade instruction can be beneficial for learning under the right conditions. For example, a longitudinal study from Italy found that while a single year of multigrade instruction has positive impacts on academic performance, multiple years can be detrimental to student learning (Barbetta et al., 2023). Such negative effects were mitigated when teachers responsible for multigrade classrooms were experienced and well trained. Other studies have found similar results when multigrade instruction was led by experienced, trained and well-supported teachers (Leuven and Rønning, 2016).

With a mix of schools facing the pressing challenge of insufficient teachers to guarantee single-grade instruction, along with large class sizes, a thorough reflection on the implementation of multigrade models is essential in Ghana. Evidence shows the potential of multigrade teaching when teachers are well equipped, so it is crucial to consider this option in contexts where it is warranted, such as schools in sparsely populated areas. Some countries, such as Senegal, have opted to invest in strengthening the quality of multigrade teaching, by providing targeted training, implementing multigrade-specific pedagogies and allocating adapted learning materials. Similarly, investments in Ghana could help ensure that where multigrade instruction is needed, it is delivered in ways that maximize learning.

Map 3 identifies the districts with the greatest share of schools that do not have enough primary teachers to satisfy all grade-level requirements. The regions with the greatest proportion of schools that experience this unique problem – of having low PTRs but lacking enough teachers to facilitate single-grade instruction – are Oti (36 per cent of all public primary schools), Volta (32 per cent) and Savannah (31 per cent). Comparatively, the regions with the greatest proportion of schools with high PTRs and a shortage of grade-level teachers are North East (49 per cent of all public primary schools), Savannah (45 per cent) and Upper West (35 per cent).

Map 3: Share of primary schools with low PTRs and less than six teachers (left) and those with high PTRs and less than six teachers (right) by district, 2022/23



Source: Authors' calculation from EMIS 2022/23

Notes: Darker colours represent districts with larger shares of public primary schools with (left) primary PTRs of 35:1 or less and less than six primary teachers or (right) primary PTRs of more than 35:1 and less than six primary teachers. These maps only include public schools with primary sections. This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers

3.5 Women teachers are overwhelmingly concentrated in urban areas

Gender disparities persist in the teaching workforce in Ghana, across several dimensions. While there is gender parity in the workforce composition at primary level, few women are found at higher levels of teaching and management: Women make up 50 per cent of primary teachers, 32 per cent of JHS teachers and 25 per cent of head teachers as of the 2022/23 academic year. Research has shown that principals in Ghana tend to be more critical of their women teachers compared to men teachers, even when women teachers were more effective at increasing student test scores (Beg et al., 2021). Previous analyses of administrative data have shown that teachers at the JHS and SHS levels, particularly those that teach STEM subjects, are less likely to be women (Epstein et al., 2019; UNICEF Innocenti et al., 2023a; Ghana, MoE, forthcoming).

Identifying and addressing the barriers to greater female representation in the education sphere in Ghana is paramount. Currently, the Ghanaian MoE, UNICEF and Global School Leaders are collaborating to expand the evidence base on gender and school leadership and identify concrete policy and programmatic measures for increasing women's representation and strengthening school leadership through the Women in Learning Leadership research.[20]

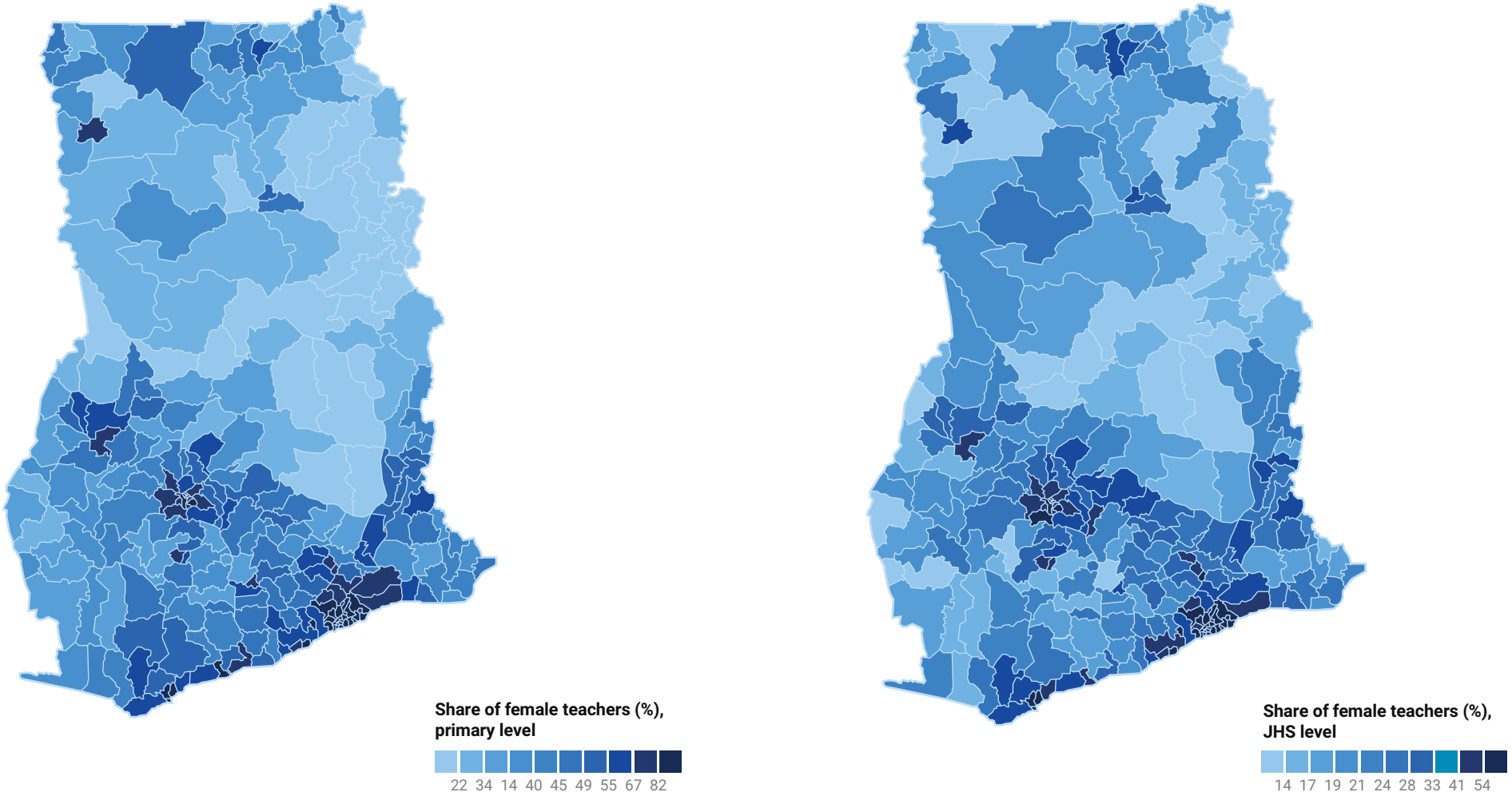
Unfounded gender stereotypes about the strengths of women and men teachers influence which grade and education levels women are expected to be most suitable for and therefore assigned to. For example, the forthcoming ESA states that this gender imbalance "is driven by historical, socio-cultural, and economic factors which are that teaching has been seen as an extension of women's roles as nurturers and caregivers; the stereotyping that [primary] teaching is a more suitable profession for women; and a relatively lower renumeration at primary level compared to other levels and professions" (Ghana, MoE, forthcoming, p. 140).

There is high variation in women's representation across regions and districts too. *Map 4* illustrates the share of women teachers at the district level for

20 The Women in Learning Leadership research project is detailed on the UNICEF website (https://www.unicef.org/innocenti/projects/women-learning-leadership).

both primary and JHS levels, where the lightest colours represent the lowest percentage of women. In only 103 districts (39 per cent of all districts) on average, primary schools have at least 50 per cent or more of its primary teachers being women. Comparatively, only 38 districts (15 per cent of all districts) have an average share of women teachers at or above 50 per cent at the JHS level. In *Map 4*, the districts with the greatest share of women teachers, at both the primary and JHS levels, are concentrated around metropolitan areas such as Accra, Cape Coast, Kumasi, Sekondi-Takoradi and Tema.

Map 4: Share of women teachers at the primary (left) and JHS (right) levels by district, 2022/23



Source: Authors' calculation from EMIS 2022/23

Notes: Darker colours indicate greater shares of female teachers. These maps only include public schools. This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers

Schools in the central and northern districts in Ghana have the lowest share of women teachers. At the primary level, 9 out of the 10 districts with the lowest proportion of women teachers are in the Northern region: the districts of Karaga (15 per cent of primary teachers being female), Gushegu (15 per cent), Mion (8 per cent), Nanumba North (15 per cent), Nanumba South (17 per cent), Saboba (12 per cent), Tatale Sanguli (10 per cent), Yendi (17 per cent) and Zabzugu (8 per cent).[21] A number of districts in the central regions of Bono (such as Banda), Bono East (such as Kintampo South and Sene East) and Oti (such as Krachi West and Nkwanta North) also have some of the nation's weakest representation of women teachers.

Many of these districts experience challenging conditions, including limited accessibility due to difficult terrain, poor housing infrastructure, inconsistent access to water and electricity, and security challenges (Salifu, 2020; Opoku-Asare et al., 2022; Ampofo and Yamoah, 2025). Such challenges may disproportionately affect women teachers, especially those who are moving to such areas alone and whose families and social networks are located elsewhere in the country. Comparatively, 9 of the 10 districts with the greatest shares of women primary teachers are located in the Greater Accra region, these being Ablekuma West (89 per cent of primary teachers being female), Adentan (89 per cent), Ayawaso West (87 per cent), Ga Central (89 per cent), Ga North (90 per cent), Kpone-Katamanso (89 per cent), La Dade Kotopon (87 per cent), La Nkwantanang Madina (91 per cent) and Tema West (92 per cent).[22] These trends are similar in JHS schools, albeit with even fewer women teachers.

Women teachers are disproportionately concentrated in urban schools, which account for only a quarter of all basic schools in Ghana. At the national level, the share of women teachers in urban schools reaches 70 per cent at the primary level and 43.6 per cent at JHS, compared to just 35.8 per cent and 21.1 per cent in rural schools. Even at kindergarten, women teachers are more common in urban schools (96.1 per cent) than in rural ones (79.5 per cent). This imbalance is partly explained by gender-specific concerns such as safety, security and the lack of social amenities in rural areas, which discourage deployment to these zones. Traditional gender norms

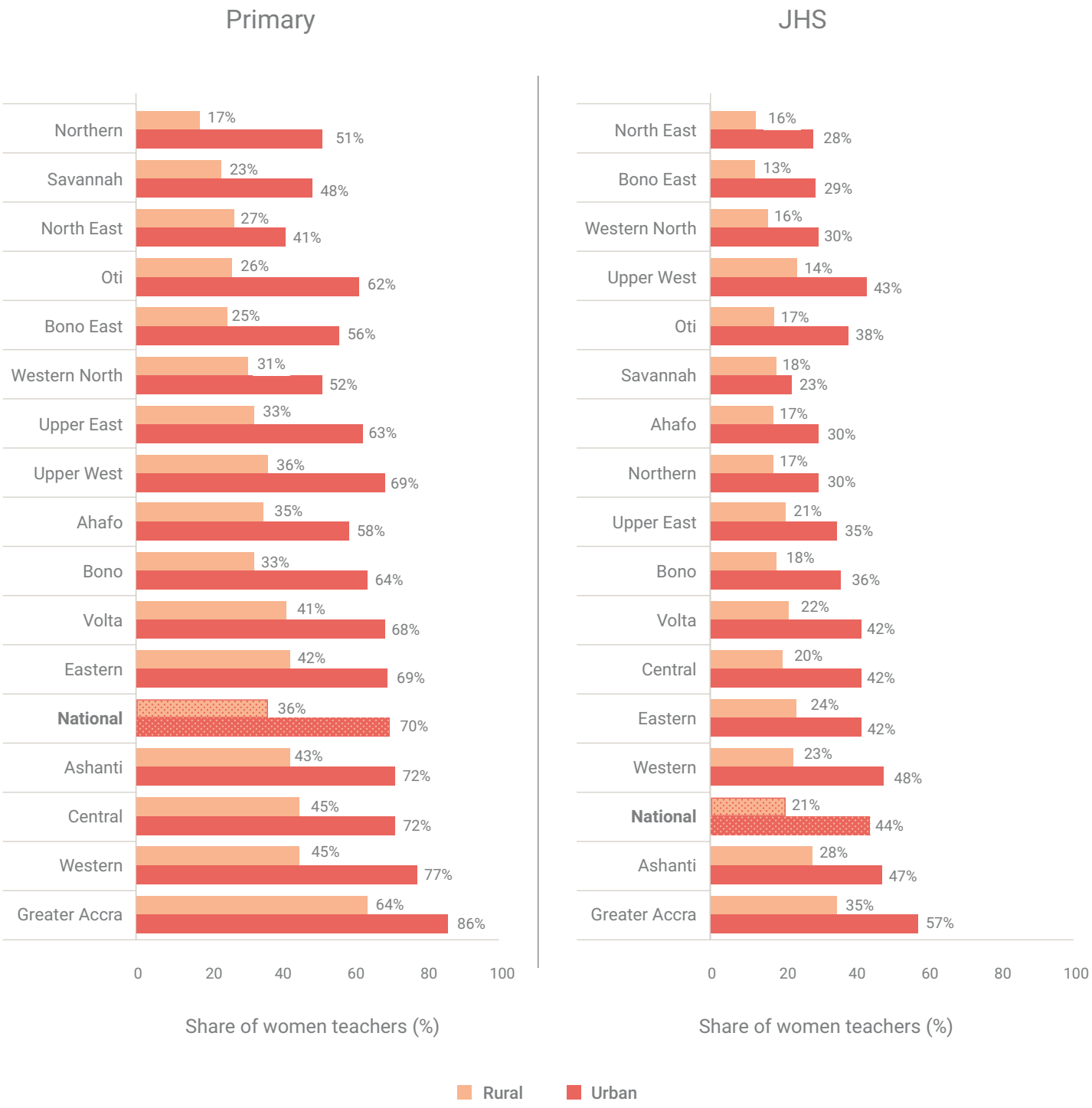
21 The remaining district is the Daffiama-Bussie-Issa district of the Upper West region, with 16 per cent of all primary teachers being women.

22 The remaining district is the Asokwa district of the Ashanti region, with 90 per cent of all primary teachers being women.

also place domestic and caregiving responsibilities on women, making employment outside the home more challenging than it would be to manage in metropolitan areas with better access to water, energy, health services and childcare. Additionally, rural areas typically offer fewer employment opportunities for spouses, reducing the likelihood of family relocation and further limiting mobility to these regions.

The urban–rural gap in women teacher representation is observed across regions, as shown in *Figure 11*. In almost all regions, urban primary schools have over 20 percentage points more women teachers than rural schools, with the North East region being the only exception. The gap is particularly stark in Oti (a difference of 35.6 percentage points), Northern (a difference of 33.5 percentage points) and Upper West regions (a difference of 32.9 percentage points) where rural schools face the most acute shortage of female teachers at the primary level. This trend continues at the JHS level, though the average urban–rural gap is slightly smaller: 17.7 percentage points across all regions compared to 27.6 percentage points at the primary level. Even so, the shortage in rural schools remains significant.

Figure 11: Differences in the share of women teachers between urban and rural schools by education level and region, 2022/23



Source: Authors' calculation from EMIS 2022/23

Notes: Regions are arranged from top to bottom in ascending order of their average share of women teachers (across both rural and urban schools). Differences in average share of women teachers (both at the primary and JHS levels) between rural and urban schools were statistically significant at the 5 per cent level ($p < 0.05$) for all regions, as well as for the national average.

Women teachers are shown to be associated with a range of positive outcomes for girls and young women. A growing global evidence base suggests that the presence of a women teacher can play an important role in promoting enrolment and retention for girls (Evans and Le Nestour, 2019).[23] In Ghana too, these gendered dynamics play out with the presence of women teachers at the primary level being positively associated with girls' foundational learning outcomes as measured by the NST.[24] In addition to core education outcomes, women teachers have positive associations with young girls' socioemotional development and education aspirations (Lee et al., 2019; Evans and Le Nestour, 2019).

Investing in girls' education and supporting women teachers remains crucial. Although girls often outperform boys in primary school, this advantage rarely translates into equal labour market outcomes, where gender gaps in pay and promotions persist. Stronger educational attainment can help close these gaps. Moreover, evidence shows that educating girls delivers broad social benefits, including improved child health, reduced early marriage and lower maternal mortality. These impacts underscore the need for sustained efforts to advance girls' education and strengthen the role of women teachers as role models (Carvalho and Evans, 2022).

Policy measures to increase the share of women teachers, with a targeted focus on rural schools, are a critical lever for improving both equity and learning outcomes in Ghana. Primary research and consultations with national partners reveal a number of gender-specific barriers facing women teachers, including access constraints and physical mobility issues in remote areas, safety and security, access to health and sanitation facilitates, and sociocultural barriers (UNICEF Innocenti and Global School Leaders, forthcoming). These factors are broadly consistent with global evidence (Mulkeen and Chen, 2008; Adedeji and Olaniyan, 2011; Bertoni et al., 2019). The development of interventions to specifically address these barriers will be key to increasing the share of women teachers in rural schools.

23 Evans and Le Nestour (2019) reviewed the impact of women teachers' presence on girls' learning in Ecuador, China, Korea and a number of West and Central African countries. Although their review finds broad variation, women teachers are as effective in delivering learning outcomes for girls, in addition to having a positive impact on non-learning outcomes such as motivation to stay in school.

24 The share of women teachers was also associated with lower learning outcomes for boys, although the potential mechanism of influence there is less clear (UNICEF Innocenti et al., 2025).

Integrating coherence analysis to better understand teacher shortages

3.6 Teachers are not deployed to schools where they are most needed

In addition to geographic imbalances, coherence analysis reveals that teachers may not always be deployed to schools where they are most needed. The analysis of teacher shortages based on pupil–teacher ratios presented in the previous sections – together with its detailed examination at regional, district, inter-school and gender levels – provides a critical perspective for understanding teacher needs in Ghana. This perspective is strengthened through complementary approaches such as coherence analysis, which evaluates the alignment between teacher deployment and enrolment figures.

The following section introduces an additional layer to the PTR-based approach by integrating coherence analysis, which enables a deeper exploration of education policy tools to address teacher shortages beyond increasing the number of teachers. It seeks to strengthen strategies for deployment optimization, ensuring that teacher allocation aligns more closely with actual needs.

At the national level, there is a relatively weak coherence between learner enrolment and the assignment of teachers.[25] Intuitively, more teachers should be posted to the areas with the most students – or, in other words, student enrolment should guide teacher allocation decisions. However, this does not appear to be the case in Ghana at the primary and JHS levels:

- ***Coherence at the primary level:*** The relationship between the number of learners and teachers at each public primary school is represented by a correlation coefficient, or R^2, of 0.60, or conversely a randomness of 0.40 ($1 – R^2$). This low correlation or high randomness suggests that 40 per cent of variation in teacher allocation is driven by factors other

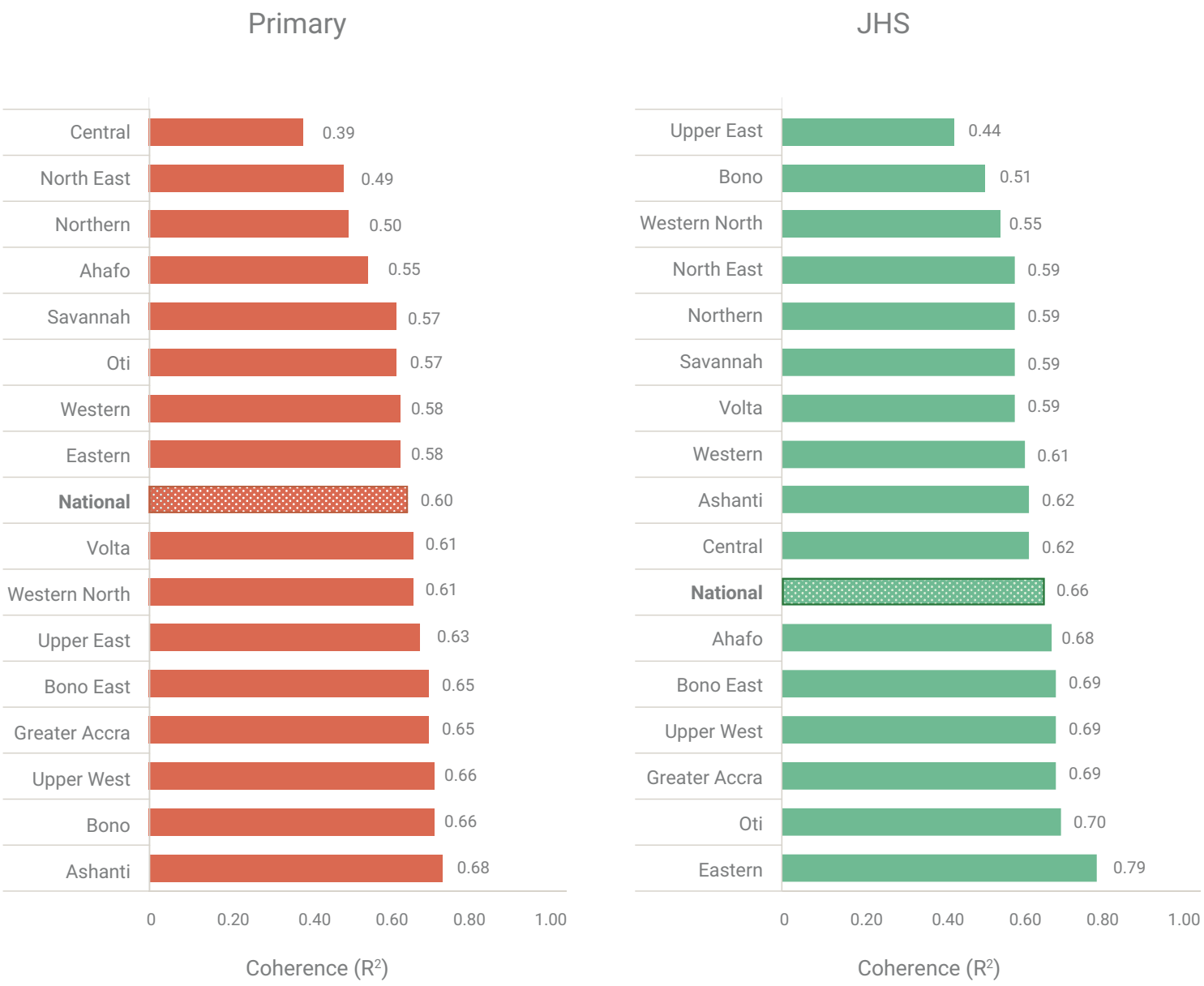
25 Equitable allocation of teachers means the number of teachers in a school is proportional to the number of pupils enrolled – i.e., the degree of coherence (measured in terms of R^2) is closer to 1. Another indicator for presenting this information is the degree of randomness ($1 – R^2$), in which a higher degree of randomness indicates that a higher share of teacher allocation is linked to factors other than student enrolments.

than student enrolment. Coherence in teacher allocation at the primary level is lower in rural public schools (with an R^2 of only 0.51) compared to urban public schools (with an R^2 of 0.68). However, coherence in primary teacher deployment is the lowest in private schools, where 74 per cent of variation in teacher allocation is being driven by factors other than student enrolment.

- ***Coherence at the JHS level:*** Coherence in teacher deployment at the JHS level is similar to the primary level and low, with an R^2 value of 0.62. In other words, 38 per cent of variation in teacher allocation at the JHS level is driven by factors other than student enrolment. Unlike the primary level, coherence in the allocation of JHS teachers is comparable between rural public schools and urban public schools. However, similarly to primary schools, coherence in teacher deployment is the lowest in private JHS schools, where only 22 per cent of variation in teacher allocation is explained by student enrolment (R^2 of 0.22).

There is substantial variation in the coherence of teacher allocation regionally. As shown in *Figure 12*, primary schools in the Central (with an average coherence of 0.39), North East (0.49), and Northern (0.50) regions tend to experience greater inconsistency in teacher allocation relative to student enrolment. At the JHS level, the Central region shows the highest levels of allocation mismatch, with 54 per cent or more of teacher placements influenced by factors other than pupil numbers. Some of these reasons could be valid at the JHS level, such as language- or subject-matching needs; however, more broadly, it is desirable to have greater coherence in teacher allocation.

Figure 12: Coherence in teacher allocation by region and education level, 2022/23



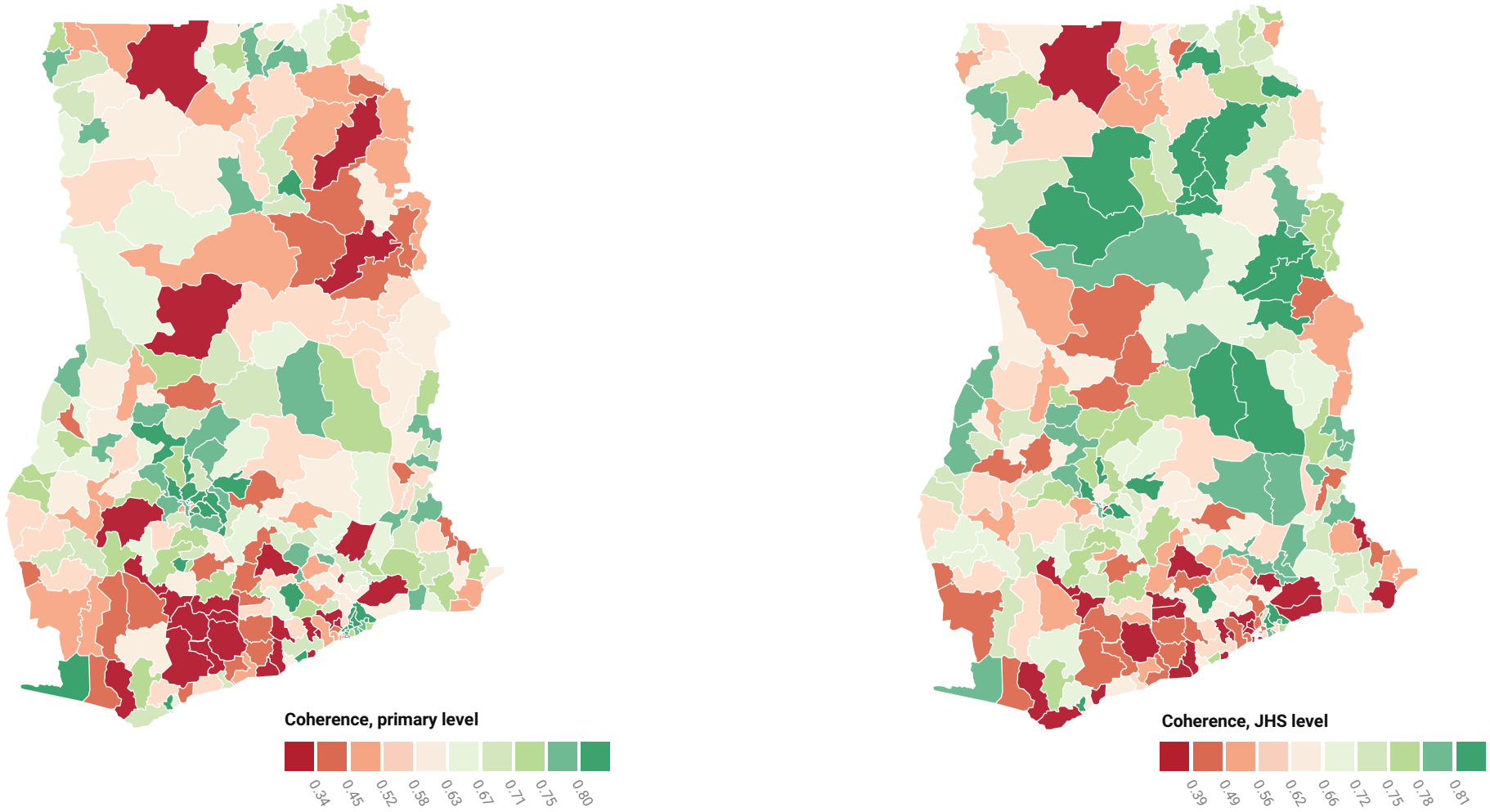
Source: Authors' calculation from EMIS 2022/23

Notes: Regions are arranged from top to bottom in ascending order of coherence in teacher allocation.

Most districts experience high randomness (low coherence) in teacher allocation at both the primary and JHS levels. *Map 5* illustrates this mismatch by plotting the average coherence in teacher allocation in each district, highlighting where teacher allocation is least aligned with enrolment needs. The recommended target coherence for teacher allocation is a degree of coherence of 0.8 or greater, as defined by the GPE (de Chaisemartin, 2017), meaning that at least 80 per cent of the variation in teacher allocation is explained by learner enrolment. At the primary level, 26 districts (10 per cent of all districts) in Ghana have a degree of coherence greater than or equal

to 0.8 at the primary level. A small, though marginally larger, number reach this target at the JHS level, with 34 districts (13 per cent of all districts). These findings reveal that a significant majority of districts have not been able to align teacher placements with school needs, resulting in some schools being overstaffed while others remain understaffed. This implies that, on a national scale, factors outside of learner enrolment influence how teachers are allocated. Identifying what external factors influence teacher allocation is an important next step to address the issue.

Map 5: Degree of coherence in teacher allocation at the basic level by district, 2022/23



Source: Authors' calculation from EMIS 2022/23

Notes: Dark red colours identify districts with low coherence in teacher allocation. Dark green colours identify districts with high coherence in teacher allocation. The darkest green colours identify districts whose average coherence nears or exceeds GPE's recommended coherence threshold of 0.8. The maps only include public schools. This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers

While most districts do not reach GPE-recommended coherence threshold of 0.8, around three quarters do at least meet the coherence midpoint of 0.5, where 50 per cent of teacher allocation can be explained by learner enrolments. Of the 261 districts in Ghana, 194 (74 per cent) and 205 (79 per cent) have a degree of coherence of more than 0.5 at the primary and JHS levels, respectively. In such districts, decisions regarding where teachers are deployed are at least somewhat guided by where the most students are concentrated. As shown in *Map 5* above, a majority of districts with strong coherence at the primary level come from the Ashanti region, whereas most of those with the weakest come from the Central and Eastern regions. Greater Accra is home to a significant number of districts with high coherence relative to the rest of the nation (12 districts with a degree of coherence more than 0.75) and relatively low coherence relative to the nation (7 districts with a degree of coherence less than 0.45), suggesting allocation could be improved by redistributing teachers within this specific geographic pocket. Similar trends are seen at the JHS level, although overall coherence levels are slightly higher.

3.7 About a fifth of districts fail to meet national and international targets for teacher deployment

National and international targets for coherence and PTR can be used to identify districts in the greatest need of government action. As stated, Ghana has set target PTRs in its 2018–2030 ESP, at 35:1 for kindergarten and primary, 30:1 for JHS and 25:1 for SHS. Furthermore, the GPE has set a recommended target for minimum coherence at an R^2 value of 0.8. These values can be used to identify 'priority districts', those whose average coherence and PTR values do not meet recommended targets. In these districts, two detrimental teacher deployment phenomena are occurring simultaneously: (ii) teacher deployment decisions do not align with learner enrolments, and (ii) teacher shortages are significant.

The analysis presented in this subsection only focuses on issues of teacher deployment (both class size and coherence) at the primary level. The following analysis uses the national target for PTR (35:1) and a coherence threshold of 0.5 to identify high priority districts in the case of primary

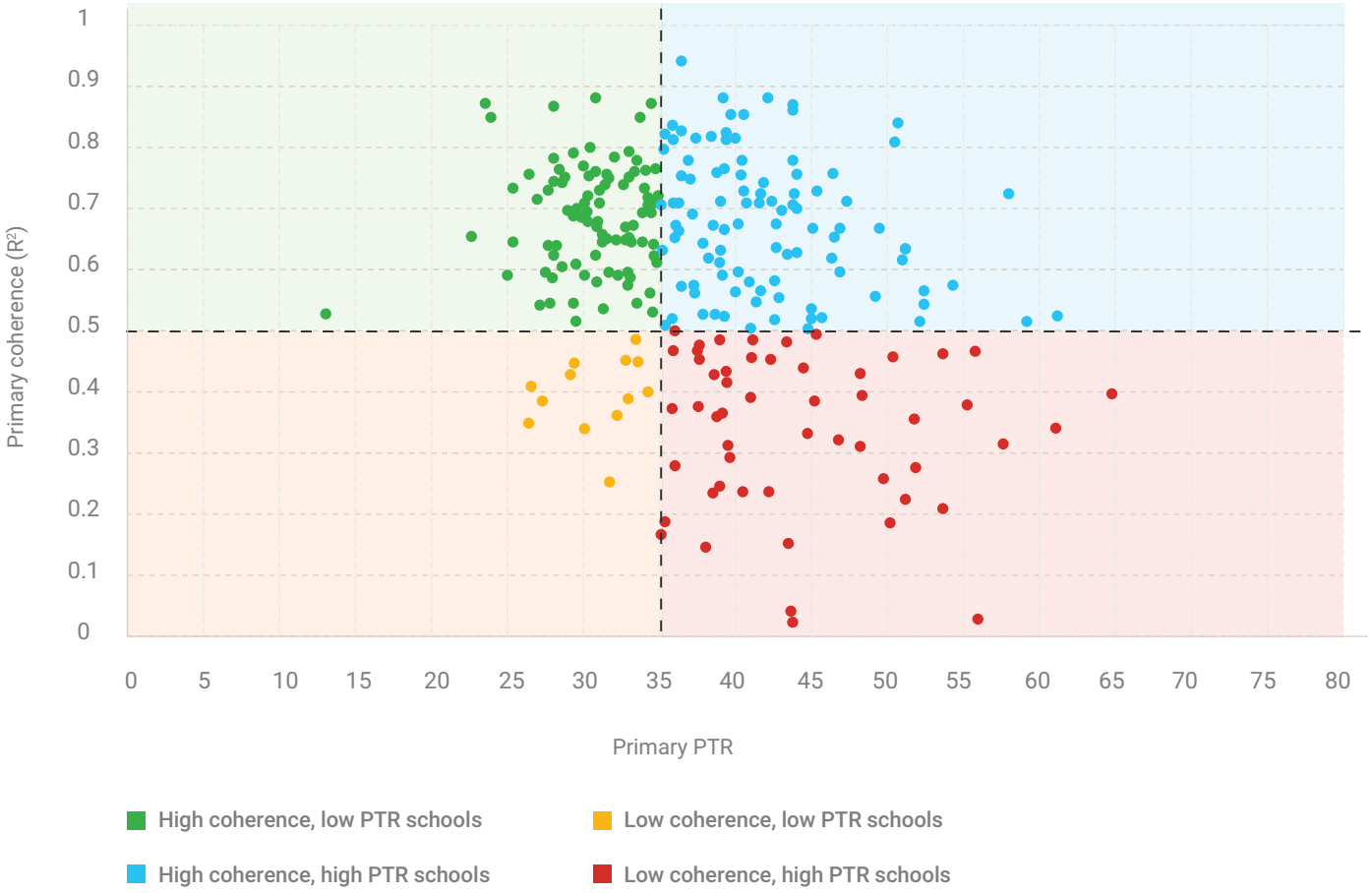
education.[26] A similar analysis was conducted at the level of JHS, where only a small number of districts failed to meet national and international targets for class size and coherence in teacher allocation. These districts, eight in total, are presented in Annex 2.

Figure 13 plots the districts' average primary PTRs (x-axis) alongside the coherence indicator (y-axis), enabling a simultaneous visualization of teacher shortages and the alignment between teaching capacity and enrolment needs. Three cases stand out:

1. **Low-priority districts:** This category groups two cases. The first is represented by the green dots and accounts for 36 per cent of the districts. These districts are characterized by an average PTR below national standards and a high coherence coefficient. They maintain an adequate number of teachers and make the most effective use of deployment tools to allocate them equitably across the district. The second case (yellow dots; 5 per cent), includes the districts with low average PTRs and low levels of coherence. While they could significantly improve teacher deployment, their low pupil–teacher ratios lessen the urgency for immediate action.
2. **Medium-priority districts:** Represented by blue dots, the districts in this category show an average PTR exceeding the national target, while ensuring high coherence. To improve pupil–teacher ratios, these districts will require either new teachers or the redeployment of teachers from other districts. About 38 per cent of districts in Ghana fall in this category.
3. **High-priority districts:** This category groups the districts that account for the highest PTRs and the lowest coherence, representing 20 per cent of the cases (red dots). These are the most pressing cases, where priority measures are needed to improve teacher deployment and achieve a distribution better aligned with enrolment needs. If deployment improvements alone are insufficient, additional efforts to increase the teaching workforce will also be required.

26 The coherence threshold is set at the midpoint of 0.5, considering the low coherence coefficient observed in Ghana (0.6) and the limited number of districts above the GPE recommended threshold of 0.8 (only 26 districts of 261 in total).

Figure 13: Scatterplot of districts based on their average PTR and coherence (primary cycle), 2022/23

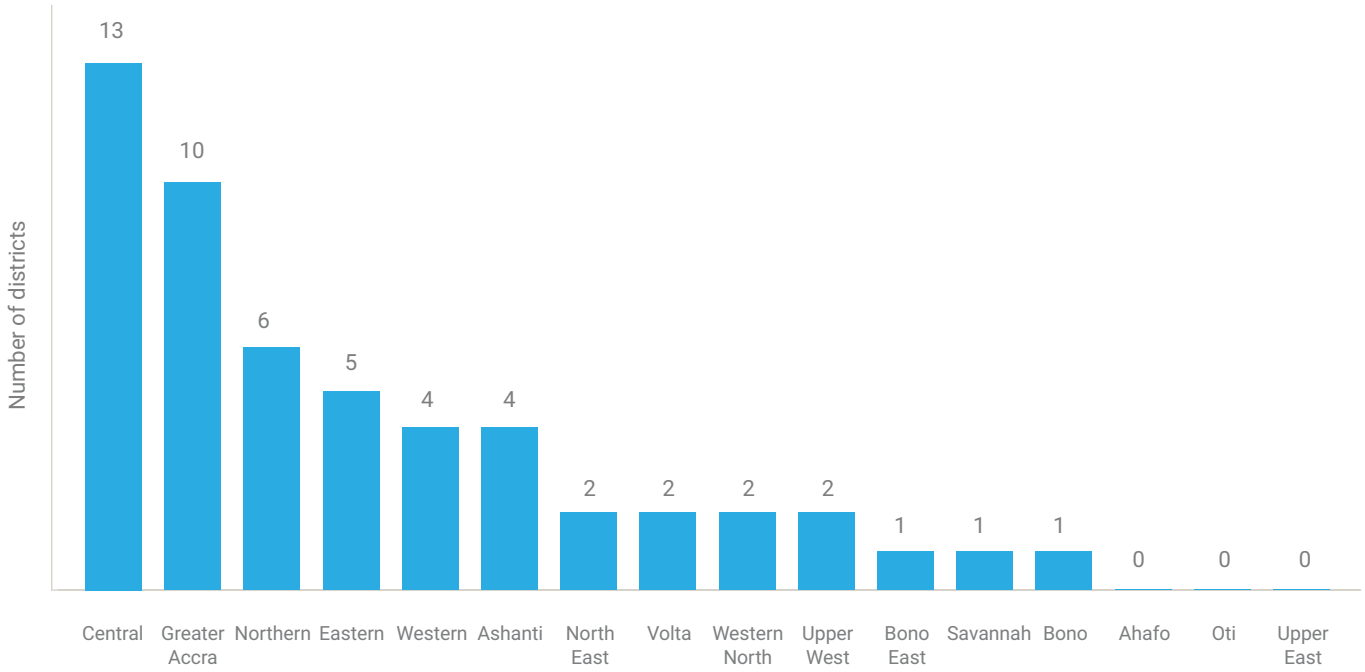


Source: Authors' calculation from EMIS 2022/23

Notes: From the upper left, dashed lines represent (i) the GPE recommendation for minimum coherence in teacher deployment at an R^2 value of 0.8, (ii) the midpoint coherence value at an R^2 value of 0.5, (iii) the MoE target PTR value for the primary level at 35:1, and (iv) the GPE recommendation for maximum PTR value at the primary level of 40:1.

The geographical distribution of high-priority districts is uneven across the country, with most of them concentrated in the Central and Greater Accra regions. The Central region has the greatest number of high-priority districts at 13 districts, closely followed by the Greater Accra region with 10 high-priority districts, as shown in *Figure 14*. Notably, based on the teacher deployment thresholds, not a single district in the Ahafo, Oti and Upper East regions would qualify as a high-priority area for intervention under this criterion. However, as highlighted, these same regions include several districts facing acute teacher deficits, making them priority areas for different types of policy action or support.

Figure 14: Number of high-priority districts by region, 2022/23



Source: Authors' calculation from EMIS 2022/23

3.8 Several factors other than learner enrolments play a role in teacher distribution

The coherence analysis presented in section 3.7 indicates that factors beyond student enrolment influence decisions around teacher deployment and the distribution of teachers across schools in Ghana. Although the teacher deployment system is centralized, several factors beyond the number of students can influence decisions regarding teacher allocation, including aspects related to the attractiveness of the schools, for example. Teachers themselves can exercise influence over their school placements in several ways:

(i) by accepting or refusing postings upon assignment or after arriving at schools;

(ii) by interfering with the recruitment and deployment process; and

(iii) more recently, by selecting preferred schools, districts, and regions during their application process.

The 'attractiveness' of a school to teachers becomes an important factor in analysing deployment measures. This attractiveness can be assessed by examining differences in teacher numbers across schools, after accounting for student enrolment and other relevant factors. This section uses multivariate regression analysis to identify which characteristics at the student, teacher and school level are most strongly associated with the number of teachers per school.[27,28] Three models were estimated: one including all teachers, one with qualified teachers only and one with women teachers.

Regression results are visually represented in *Figure 15*.[29] Annex 3 presents all the regression outputs.

The regressions analyses confirm that, in Ghana, the number of teachers in a school is positively related to student enrolment. Holding all other factors constant, every additional 100 learners in a school is associated with an additional 0.7 teachers, an additional 0.4 qualified teachers and an additional 0.4 women teachers.[30] These results suggest that the number of teachers is less correlated with enrolments when teachers are qualified or women. This confirms the analyses presented on the lower prevalence of qualified and women teachers in Ghana, which represents a significant challenge for achieving equitable and high-quality education.

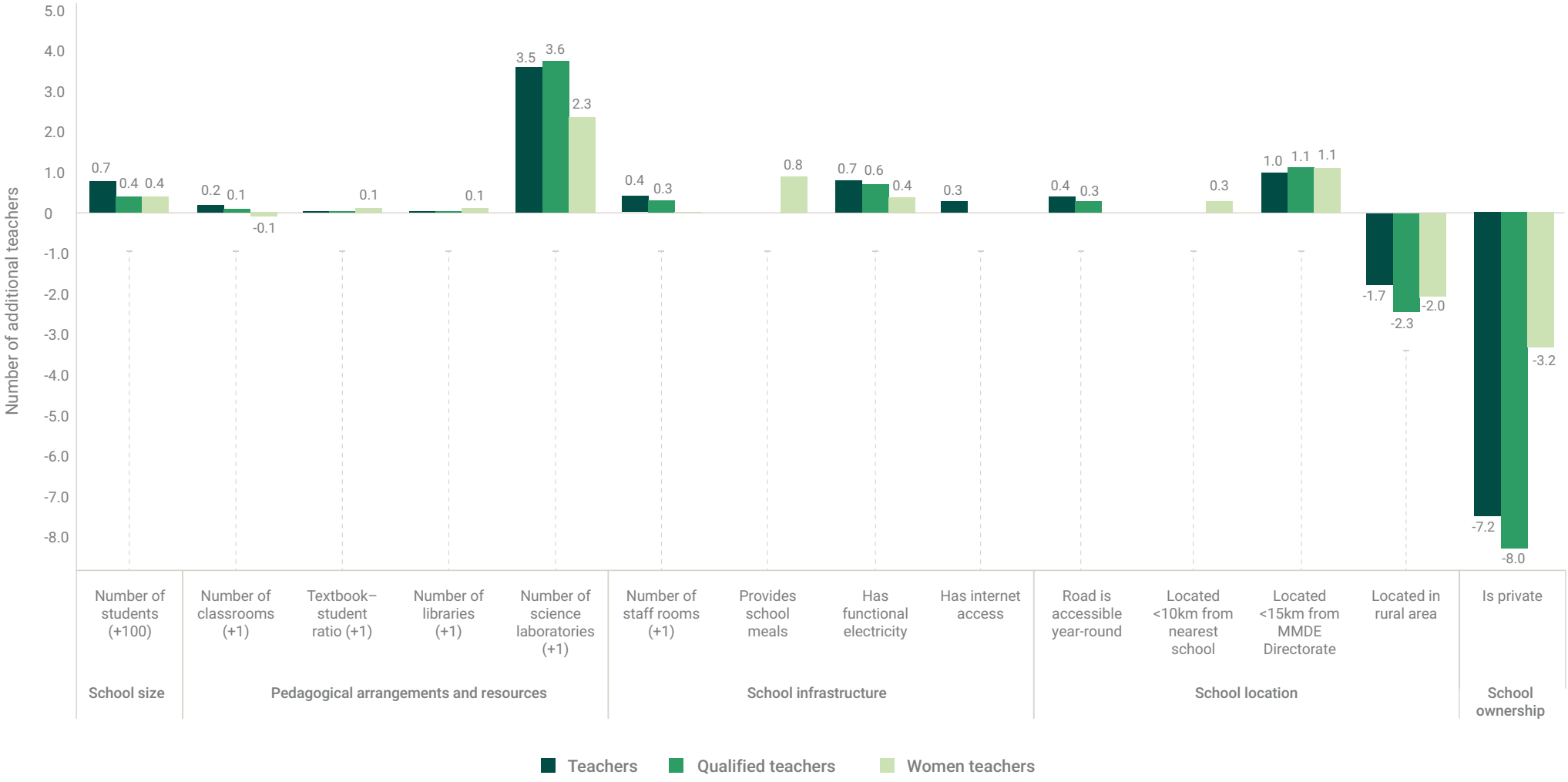
27 Another proxy for assessing the 'attractiveness' of a school for teachers is the average length of time a teacher tends to serve in said school. However, these data are not well captured in the EMIS datasets, and the MoE encourages that teachers transfer schools every five years.

28 Multivariate regression analyses run at the school level, with fixed effects at the district level and robust standard errors. Final sample size for the regressions was 29,255 schools.

29 The associations between teacher allocation and school, teacher and learner characteristics represent correlations, but do not necessarily signal the existence of a causal link. Furthermore, the available data capture information on some, but not all, factors that influence teacher allocation. Other observed or unobserved factors may also influence teacher allocation but are not captured in the analysis.

30 'Qualified teachers' refer to those that hold at least an academic or professional degree, where 'teachers' refers to all additional teachers.

Figure 15: Selected multivariate regression results: Number of teachers, qualified teachers and women teachers by school characteristics, 2022/23



Source: Authors' calculations based on EMIS 2022/23.

Notes: Only correlations statistically significant at the 10 per cent level ($p < 0.1$) are shown. The values represented on the y-axis correspond to the regression coefficients associated with the variables on the x-axis. Thus, the first bar in dark green represents the variation in the number of teachers associated with having 100 additional students.

Other factors strongly associated with the number of teachers in a school are as follows:

1. **School location and accessibility:** This factor is captured through school locality type (rural versus urban), accessibility and distance from the nearest MMDE Directorate. After controlling for all other factors, the analysis shows that rural schools have an average of 1.7 fewer teachers than urban schools, 2.3 fewer teachers with at least a degree (in the education field or otherwise) and 2.0 fewer women teachers. Increased distance from the nearest MMDE Directorate and/or nearest school and being on a road that is not accessible year-round is also associated with fewer teachers. These findings also confirm that qualified and women teachers are less likely to be in posts in remote areas, systematically disadvantaging children attending rural and hard-to-reach schools.
2. **Classroom and pedagogical resources:** Controlling for all other factors – including the number of learners in a school – the number of teachers is positively and significantly related to the number of classrooms, with 0.2 teachers per additional classroom in a school and 0.1 qualified teachers. When it comes to women, the association is negative (–0.1), highlighting that women may be less likely to be placed in bigger schools. The presence of certain learning spaces may influence teacher deployment as shown by schools with science laboratories having on average 3.5 more teachers, 3.6 more qualified teachers and 2.3 more women teachers than those without. Other learning resources such as the number of textbooks per student and the number of library facilities are also positively correlated with the number of women teachers.
3. **School infrastructure:** In terms of infrastructure, the number of teachers is positively associated with electricity and Internet access, with 0.3 more teachers if the school has Internet and with 0.6 more teachers, 0.6 more qualified teachers and 0.4 more women teachers if the school has electricity. Schools with staffrooms also tend to have, on average, 0.4 more teachers. Finally, schools that provide students with daily school meals are also likely to have more women teachers than those that do not.
4. **School ownership:** As shown in the previous sections, private schools have, on average, 7.2 less teachers than public schools. This negative correlation is greater when considering teacher qualifications, with private schools having 8.0 less teachers that have at least a degree.

Within-school inequalities in teacher allocation patterns

3.9 Within-school inequities in teacher allocation are persistent in rural and private schools

Early evidence from sub-Saharan Africa suggests that head teachers allocate more and better-qualified teachers to higher grades. This is done to improve school performance indicators, as the highest grade is usually the only grade in the primary cycle where national examinations occur.[31] Conversely, fewer and less qualified teachers in early grades disadvantage learners at a critical juncture when they acquire basic literacy and numeracy skills.[32] Learners who fail to acquire basic literacy and numeracy skills not only fall behind in terms of grade-level competencies but are often unable to engage with more advanced curricula as they progress through the education cycle, a phenomenon known as the 'Matthew effect' (Walberg and Tsai, 1983). The performance gap between learners may increase over time and the most disadvantaged learners may never catch up or may drop out from school.

This section presents an analysis of grade-level PTRs in primary education.[33] As expected, these calculations are not possible in schools practising multigrade instruction (5,182 in total; 23.5 per cent of all public basic schools), so these cases are excluded from the analysis of grade-level PTRs presented below.[34]

31 For countries with data, the PTR improves with each successive grade of education. More recent analysis shows that head teachers have a clear preference in allocating new teachers to Grade 8 to improve testing performance in national exams (Caro and Ndem, 2019; Zubairi, 2021).

32 The situation in Ghana does not follow this exact scenario. At the primary level, teachers assigned to the last grade of primary actually have slightly less experience than those assigned to the first grade of primary (an average of 8.4 years and 9.2 years of teaching experience, respectively). However, only about 39 per cent of Grade 1 teachers have at least a degree, compared to about 44 per cent of Grade 6 teachers, according to data collected in the 2022/23 academic year.

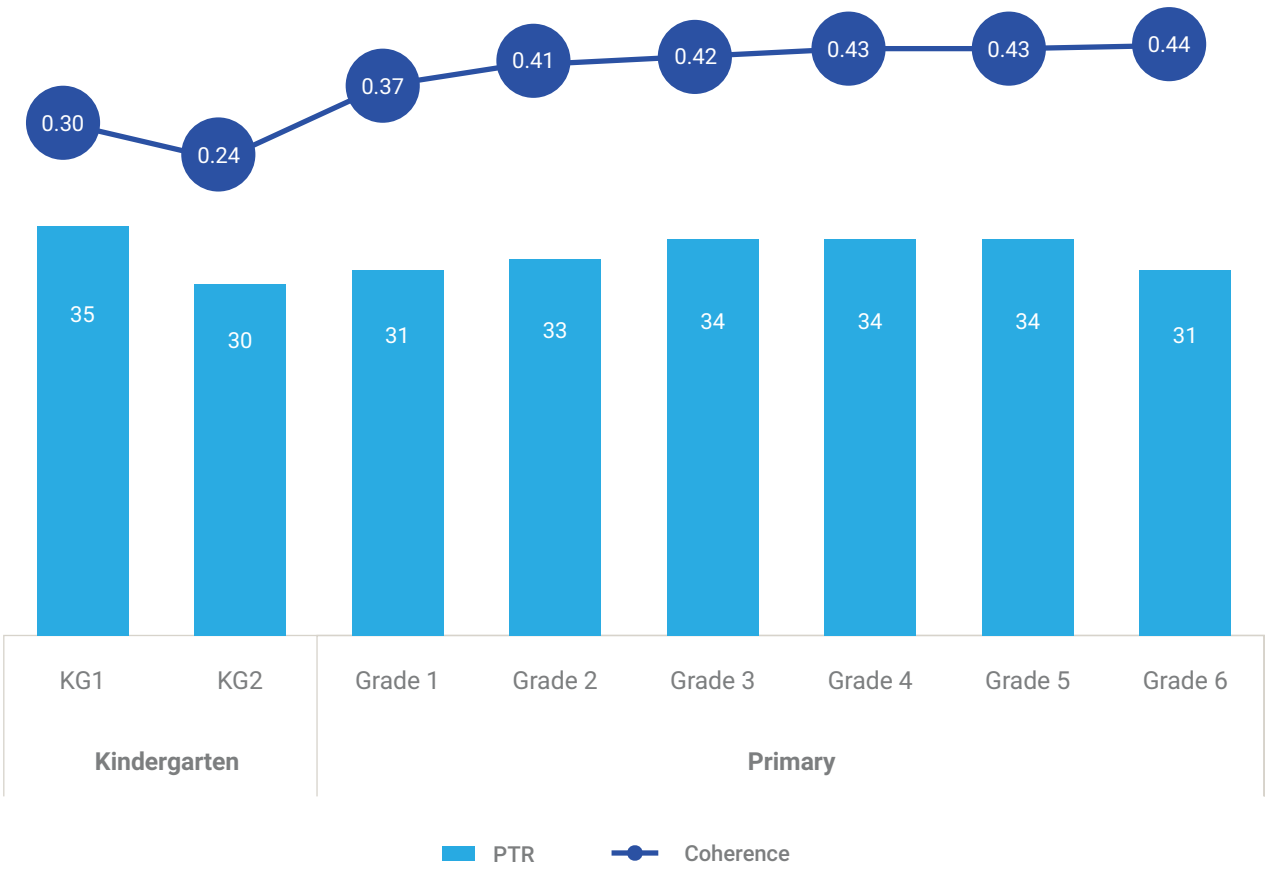
33 The analysis is not conducted at the JHS level, where subject-based teaching is practised, with teachers often being assigned to specific subjects across multiple grades (JHS1, JHS2 and JHS3).

34 The prevalence of multigrade teaching complicates grade-level PTRs comparisons. With the granularity of available data in the Ghana EMIS, it is not possible to determine which teachers are assigned to which grades when multigrade teaching is being used. These schools are excluded from the analysis of grade-level PTRs presented. Human error in the reporting of grade-level assignments, now done by teachers themselves, may also lead to inconsistencies in the EMIS data being used for this analysis.

Annex 4 presents a comparison of key characteristics between the full sample of public basic schools and the subset included in the grade-level PTR analysis.[35]

Regarding class size, it remains relatively stable between the early and later years of kindergarten and primary in Ghana. *Figure 16* shows average PTR and coherence analysis by grade across kindergarten and primary levels. Notably, the lowest average PTRs are found in the second year of kindergarten (with 30:1) and Grades 1 and 6 of primary (each with an average PTR of 31:1). Comparatively, the largest grade-level PTRs are observed in primary Grades 3–5, with an average PTR of 34:1 each. While many other countries participating in the T4A research have the largest PTRs in the first grade of primary, this does not appear to be the case in Ghana.

Figure 16: PTR and coherence by grade level, 2022/23



Source: Authors' calculation from EMIS 2022/23

35 Schools most commonly employ multigrade teaching as a strategy for overcoming teacher shortages or accommodating for grade levels with few student enrolments. While it is necessary to remove schools from this analysis who use multigrade teaching, it slightly underestimates values of grade-level PTRs by inadvertently removing the schools with the most acute teacher shortages from the sample.

The grade-level average PTR gradually increases with each successive grade in the primary cycle up until Grade 5, where it then declines upon reaching Grade 6.[36] One possible explanation for this trend could be that Grade 6 student enrolments are slightly lower than other grades because pupils drop out or repeat as they progress through the primary cycle (particularly affecting students at risk of performing poorly in their final year of primary). However, enrolment differences across grades are relatively small. In the average public school in 2022/23, there were approximately 24 students in Grade 1, 25 in Grade 2, 26 in Grades 3 and 4 each, and 25 in Grades 5 and 6 each.[37] This suggests that the sharp change in PTR at the upper primary level is less driven by student numbers and more likely reflects how teachers are allocated across grades within schools.

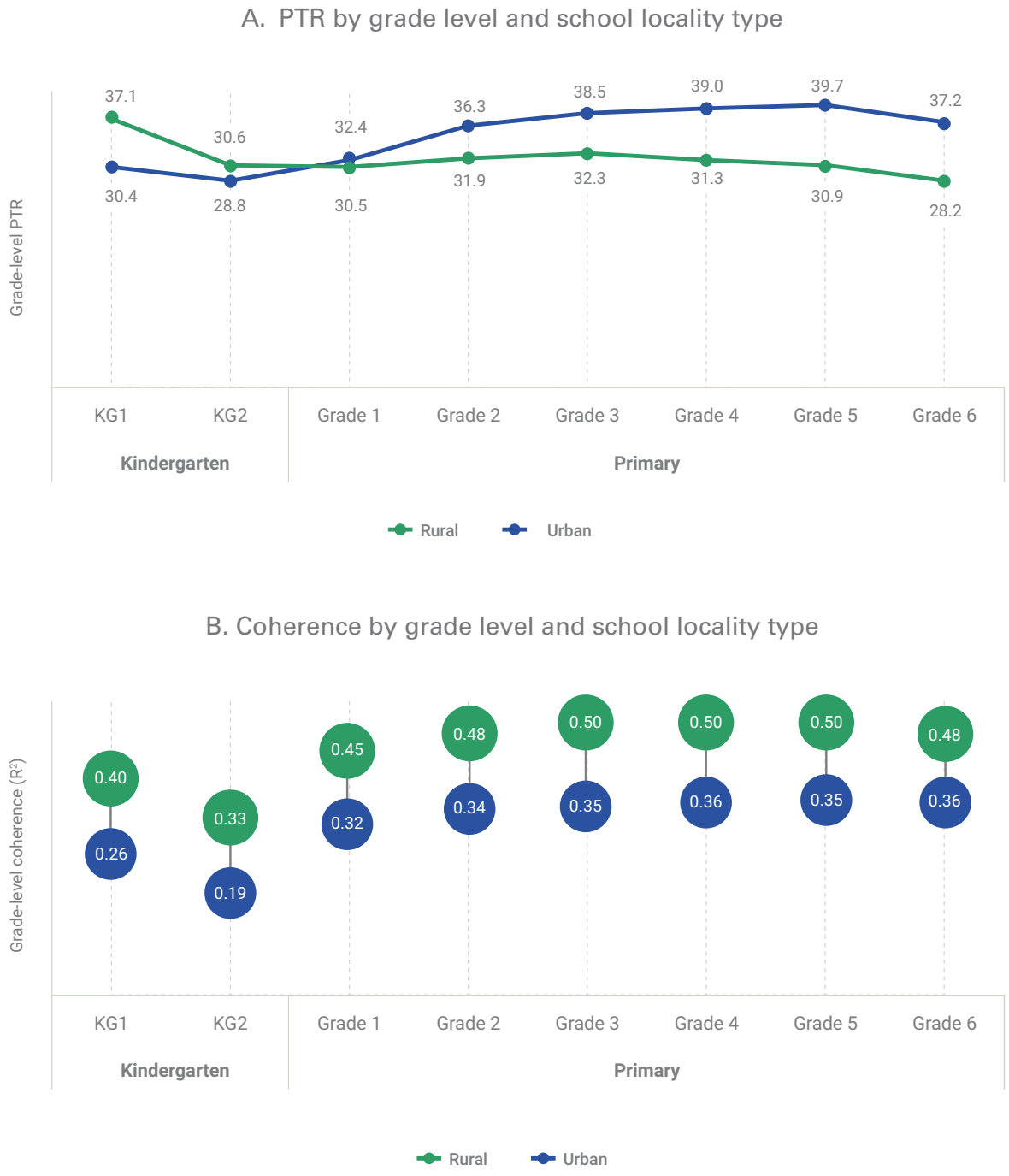
The coherence analysis shows that the alignment between teachers and enrolment figures is the lowest at the kindergarten level and the first grade of primary, and increases steadily afterwards. This suggests that teachers are less likely to be allocated based on enrolment in earlier grades, compared to final grades.

A disaggregated analysis of both indicators by location shows that while class sizes generally increase with each successive grade in urban schools, the opposite happens in rural areas (*see Figure 17*). The statistically significant trends observed show that while the average PTR decreases with grades in rural schools, in urban schools, class size actually increases. This shows that urban schools offer more teachers at the beginning of schooling, where learning is the most sensitive to quality instruction (Wisenöcker et al., 2025; Betthäuser et al., 2023; Di Pietro, 2023). On the contrary, rural schools tend to put more effort in the last years, perhaps due to smaller enrolment figures across these grades. Also shown in *Figure 17*, coherence analysis disaggregated by rural/urban location closely resembles aggregate trends, with alignment between teachers and enrolment lowest at the earliest grade levels and increasing steadily thereafter; however, coherence values are consistently higher in urban schools than in rural schools at each grade level.

36 The differences in class sizes between adjacent grade levels (e.g., between Grade 1 and Grade 2, or between Grade 5 and Grade 6) are all statistically significant. However, the difference in class size between the beginning grade of primary (Grade 1) and the final grade of primary (Grade 6) is not statistically significant.

37 Data from the 2023 ESA also show that repetition rates are highest in kindergarten and gradually decreases across the primary grades, with only a modest difference between Grades 5 and 6.

Figure 17: PTR (A) and coherence in teacher deployment (B) by grade level and school locality type, 2022/23



Source: Authors' calculation from EMIS 2022/23

'Within-school' inequity in teacher allocation is particularly pronounced in private schools. As shown in *Figure 18*, private schools experience a substantially larger, statistically significant difference in class sizes between the first and last grade of primary (a difference of 6.9 pupils per teacher) compared with public schools (0.2 pupils per teacher). This is potentially

driven by the relatively stronger incentives facing private schools to keep Grade 6 classes small as a strategy to improve learner test scores at the end of the primary cycle, partly due to greater accountability to parents. While coherence in teacher deployment increases gradually with each successive grade in both public and private schools, coherence levels are consistently and substantially higher in public schools at every grade level.

Figure 18: PTR (A) and coherence in teacher deployment (B) by grade level and school ownership, 2022/23

Source: Authors' calculation from EMIS 2022/23

3.10 Women are underrepresented as teachers in STEM subjects

Given the country's aspirations to transition to a knowledge-based economy, strengthening the skills base will require important investments beyond the primary cycle. Building on basic literacy and numeracy, lower and upper secondary education (JHS and SHS respectively) is a juncture where learners acquire more advanced competencies, including the foundation for specialized skills.

At the JHS level, several subjects are part of the curriculum in all grades. Under the Common Core Programme, all JHS students are expected to sit the following mandatory subjects: English language, mathematics, general science, social studies, religious and moral education, career technology, creative arts and design, computing, and physical education. The subjects of English language, mathematics, general science, and social studies are referred to as 'core subjects'. While almost all mandatory subjects are examined at the end of JHS via the BECE,[38] student performance across the four core subjects is used to measure their ability to progress to SHS and has implications for their options for future school placement.[39]

JHS schools in Ghana struggle with satisfying teacher needs by specific subjects. Although JHS schools advertise subject-specific teacher vacancies based on their needs, they often fail to receive applications with the appropriate subject expertise.[40] In the case of STEM subjects, for instance, this is in part driven by a shortage of teachers specializing in STEM-related subjects nationwide. Several measures are currently in place to address this issue. On one hand, Ghana is currently undertaking efforts to improve the quality of STEM instruction at the JHS and SHS levels. GES has increasingly granted study leave with pay for teachers attempting to gain further qualifications in STEM-related subjects (and for those serving schools in deprived areas). The number of teachers returning from study leave with pay between 2019 and 2023 nearly tripled, from 1,108 to 3,060 (Ghana, MoE,

38 Physical education is the only exception.

39 In 2024, all these mandatory subjects were assessed on the BECE except for computing, which was optional.

40 This finding surfaced in consultations and co-creation workshops with 27 education stakeholders for this project, representing 12 institutions, conducted in 2024/25.

forthcoming). Additionally, the African Institute for Mathematical Sciences[41] has established a five-year STEM-focused teacher training programme to provide professional development and classroom resources for STEM teachers.

To analyse teacher deployment patterns by subject, this section calculates the average number of teachers by subject per 100 JHS students.[42] This indicator can highlight disparities in teacher allocation between subjects as well as the implied workload associated.[43,44] A lower number of general science teachers per 100 students would indicate that students face potentially lower quality STEM instruction in this area, compared to other subjects, and that general science teachers face a greater workload. For this analysis, only core JHS subjects (English language, general science, mathematics, and social studies) are included, with results presented in *Table 2*.[45]

JHS schools have, on average, at least one mathematics and one English language teacher for every 100 students, while the availability of general science and social studies teachers falls below this level. This suggests that students may have more limited access to instruction in these two subjects and that teachers in these areas face relatively higher workloads. In contrast, English language and mathematics teachers are more widely available, with English language teachers being in the greatest supply across all core subjects at the JHS level.[46]

41 This is a non-governmental network of centres of excellence in postgraduate training based in five African countries including Ghana. The other countries are Cameroon, Rwanda, Senegal and South Africa.

42 The calculation aggregates students across the three JHS levels, so an analysis by grade is not possible.

43 For instance, the recommended instructional time for English language at the JHS level is four periods a week, each period consisting of 50 minutes (NaCCA, 2020). For schools with too few English language teachers for the number of students, the option of splitting students into two different streams for the English language subject would double the amount of instructional time that said English language teacher would be responsible for facilitating each week.

44 School-level data on the number of streams per subject were not available at the time of this report, preventing the calculation of stream–teacher ratios and estimated teacher workloads, metrics commonly used when assessing teacher allocation at the secondary level.

45 Consultations conducted for this research indicate that many JHS teachers are responsible for teaching multiple subjects. However, in EMIS data, records show only one subject specialization per teacher, which may not fully reflect their actual teaching assignments. As a result, teacher counts for non-core subjects (creative arts and design, career technology, computing, physical education, and religious and moral education) are more likely to be incomplete or inconsistently reported. To minimize potential underestimation and ensure comparability across subjects, this analysis focuses exclusively on the four core subjects: English language, general science, mathematics and social studies.

46 For reference, the average school with a JHS section has about 44 JHS1 students (68 in urban schools and 35 in rural schools), 42 JHS2 students (66 in urban schools and 33 in rural schools), and 40 JHS3 students (62 in urban schools and 31 in rural schools).

Table 2: Subject teachers per 100 students by core JHS subject, school location and school ownership, 2022/23

Subject	Teachers per 100 JHS students (across grades)			
	Public schools			Private schools
	All	Rural	Urban	All
English language	1.3	1.3	1.1	1.9
Mathematics	1.1	1.2	0.9	1.5
General science	0.9	1.0	0.7	1.1
Social studies	0.8	0.9	0.7	0.9

Source: Authors' calculation from EMIS 2022/23

Across almost every mandatory subject, teacher–student ratios are greater in private schools than in public schools and greater in rural schools than in urban schools. These differences are greatest for English language teachers, with private schools having 0.6 more teachers per 100 JHS students than public schools, and for mathematics teachers, with a gap of 0.4.[47] Across all core subjects, rural public schools have 0.2–0.3 more teachers per 100 students than urban public schools, and these differences are statistically significant. These disparities in access to subject teachers across school location and ownership are most likely driven by large enrolment differences, with urban and public schools hosting more students compared to rural and private ones.[48]

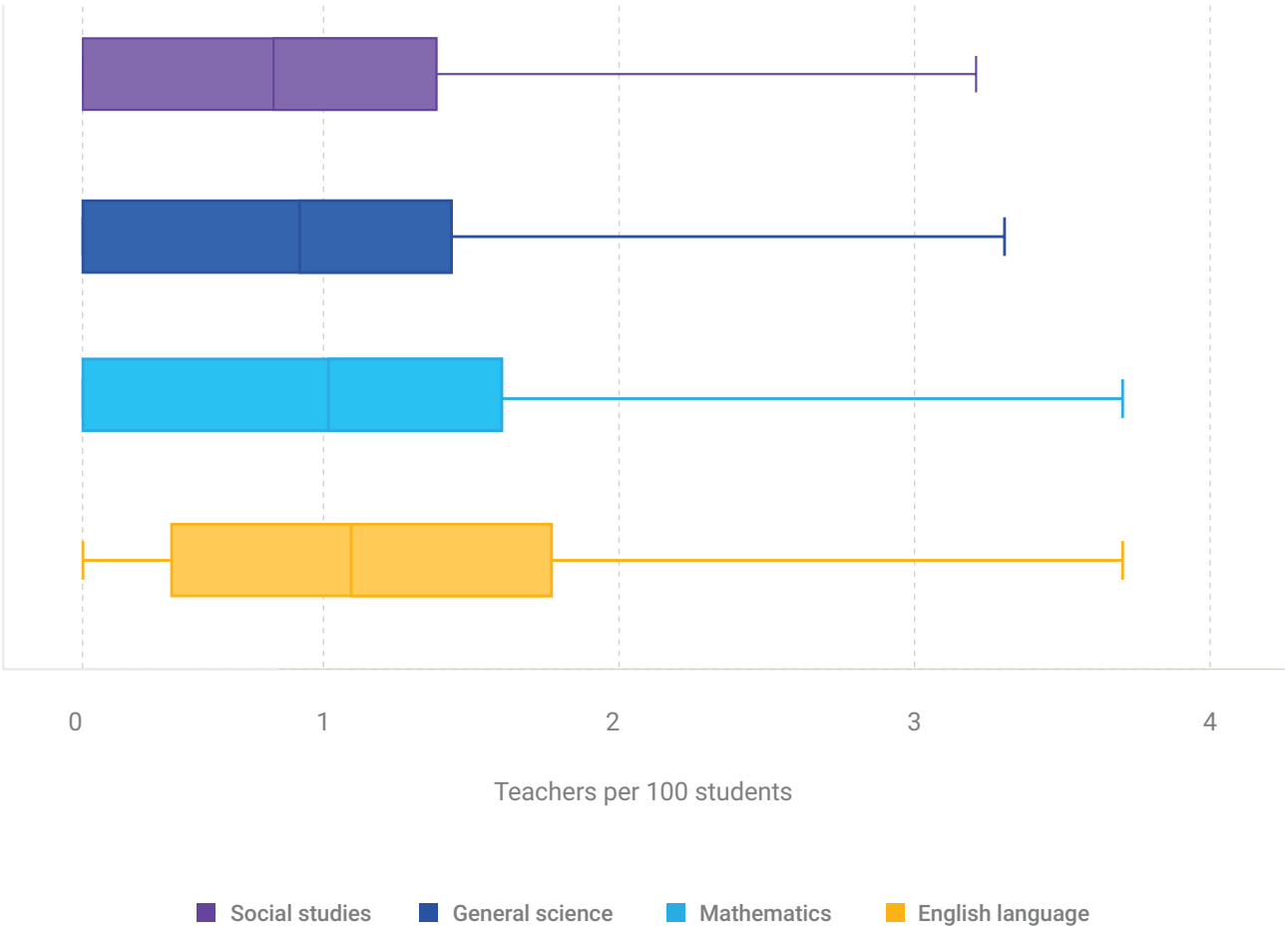
Figure 19 shows substantial variation in subject-specific teacher availability across JHS schools. All four core subjects exhibit right-skewed distributions, indicating uneven provision of teachers, with many schools operating at relatively low staffing levels. This dispersion is particularly pronounced in English language and mathematics, which display wide interquartile ranges and long right tails, suggesting that while some schools are relatively well staffed, many others have comparatively limited teacher availability. Although

47 Differences in teacher–student ratios between public and private schools are statistically significant for every core subject, with the exception of social studies.

48 Of those with JHS sections, public schools have an average of 126 JHS students, compared to only 66 students in private schools. Similarly, when only considering those that are public, urban schools with JHS sections have an average of 195 JHS students, compared to only 98 in rural schools.

English language is, on average, better staffed than other subjects, its distribution also shows that a non-negligible share of schools have very low teacher–student ratios. Similar patterns of constrained staffing are observed in general science and social studies, where the clustering of schools near the lower bound indicates consistently limited subject-teacher availability across much of the system. Consultations suggest that in schools with low subject-teacher availability, instructional responsibilities are often shared across teachers, head teachers or other staff to ensure subject coverage over the academic year (UNICEF Innocenti et al., 2024).

Figure 19: Variation in teacher to student ratios across core JHS subjects, 2022/23



Source: Authors' calculation from EMIS 2022/23

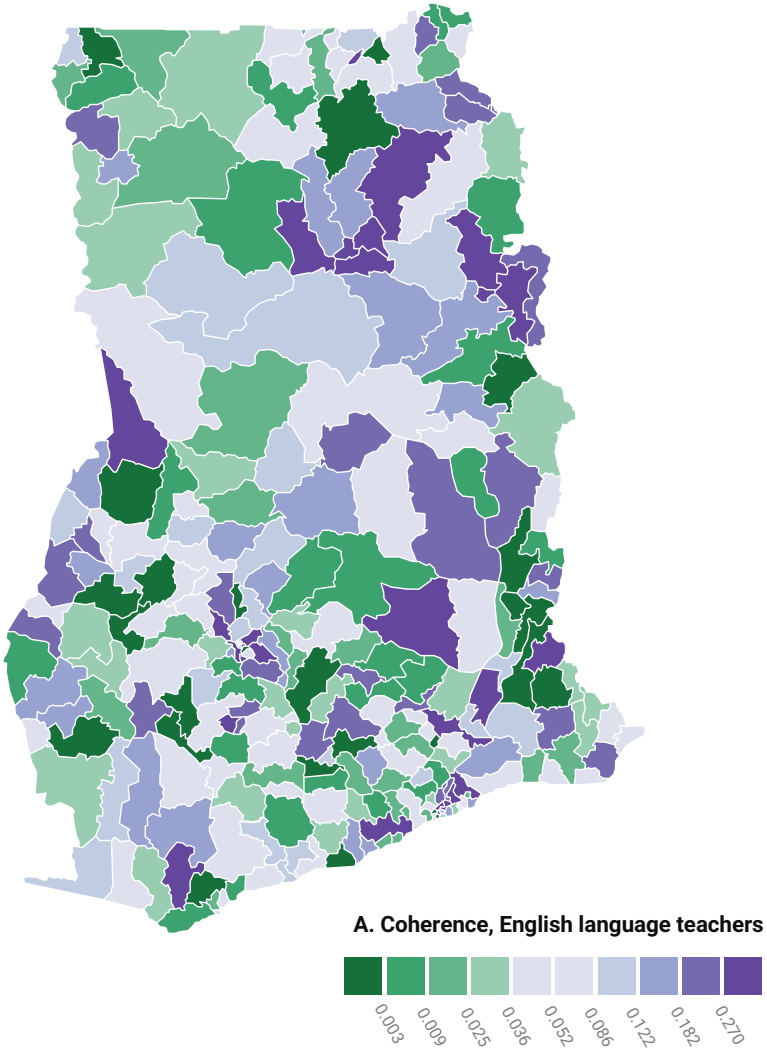
Notes: The x-axis represents the number of teachers per 100 students. Each box spans the interquartile range (25th to 75th percentile), with the line inside the box indicating the median (50th percentile). Whiskers extend to values within 1.5 times the interquartile range. A missing whisker on one side means the minimum or maximum coincides with the quartile, while a very narrow box indicates low variability across schools for that subject. Boxplots exclude outliers.

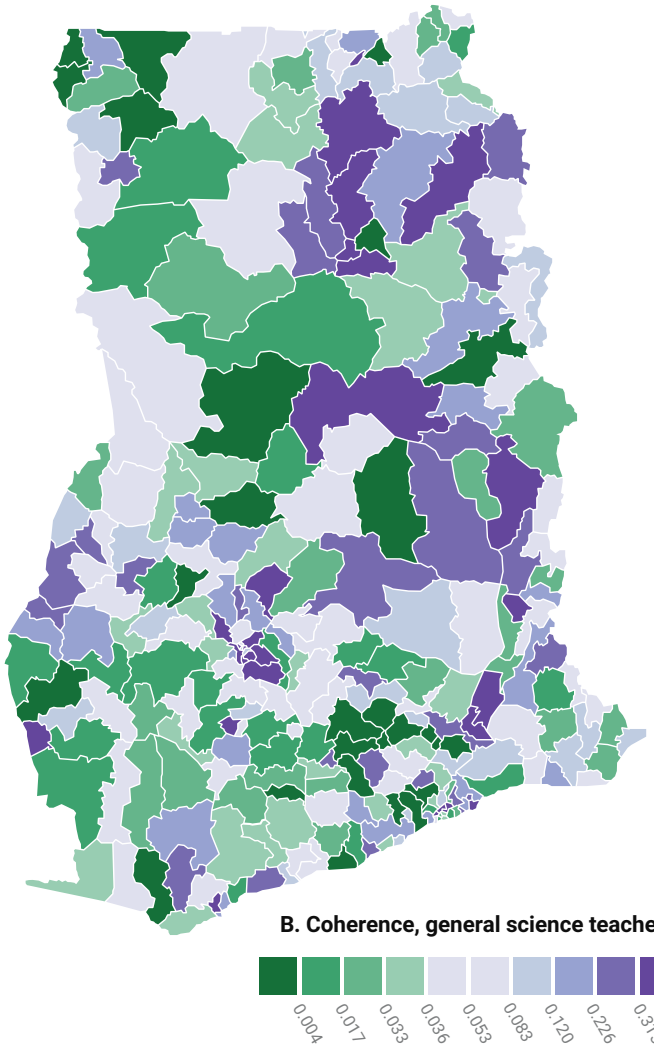
An analysis of the level of coherence by subject confirms the lack of alignment between the number of teachers and the number of students at JHS. The allocation of subject teachers at the JHS level does not align with learner needs. *Map 6* compares the coherence with English language, general science, mathematics and social studies teachers at the district level and reveals two major findings:

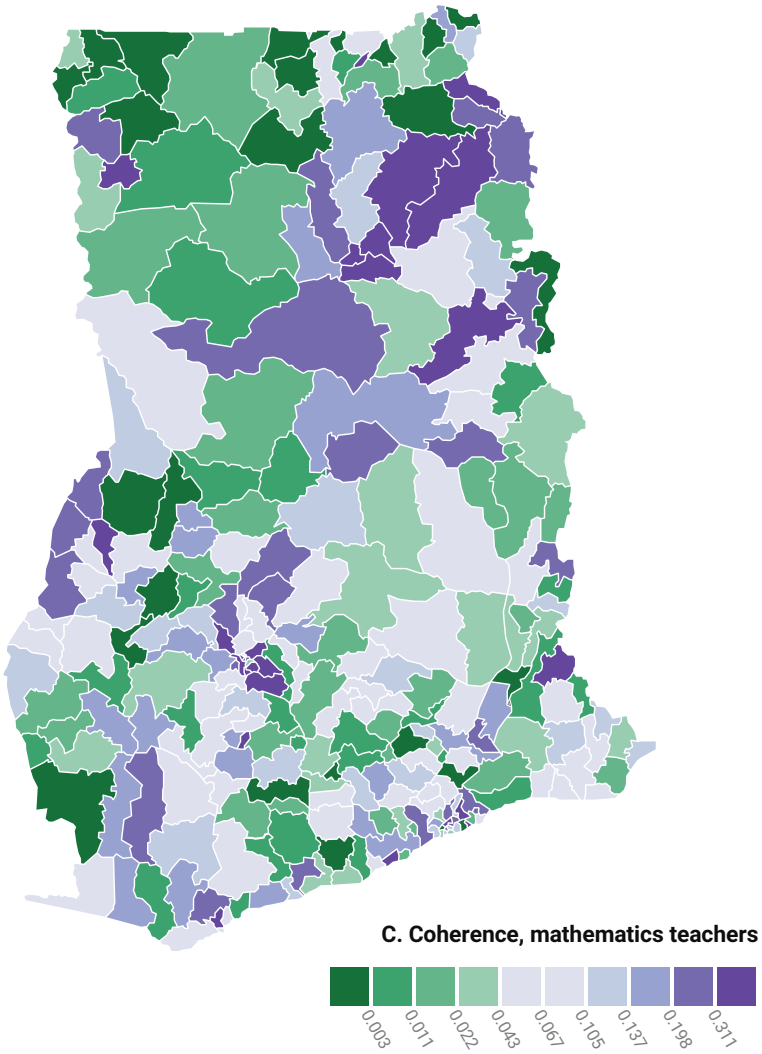
1. Low coherence in subject-teacher deployment is widespread across all four core subjects, with no clear systematic difference between subjects. The average coherence value for any of the four core subjects does not exceed 0.15. Instead, coherence varies considerably within each subject, with some districts demonstrating relatively strong alignment between subject-teacher allocation and student enrolment, while many others exhibit weak alignment.
2. Low coherence is geographically clustered and affects districts across multiple regions, rather than being confined to specific subject areas. Districts with weak coherence in one subject often exhibit similarly weak coherence in others, suggesting structural challenges in subject-teacher deployment rather than isolated subject-specific shortages. For example, the Nabdam district of the Upper East region exhibits some of the lowest coherence values within each core subject across the nation (with none exceeding 0.005). Comparatively, subject-specific coherence values in the Atwima Nwabiagya North district of the Ashanti region all exceed 0.4.

The lack of alignment between the allocation of subject teachers and JHS learner enrolments suggests that other factors (e.g., teacher preferences, language requirements, etc.) may play an outsized role in deployment patterns. Reallocating subject teachers, particularly humanities teachers, across schools within districts – and using school-level enrolment data – is one path to improving the efficiency of teacher deployment.

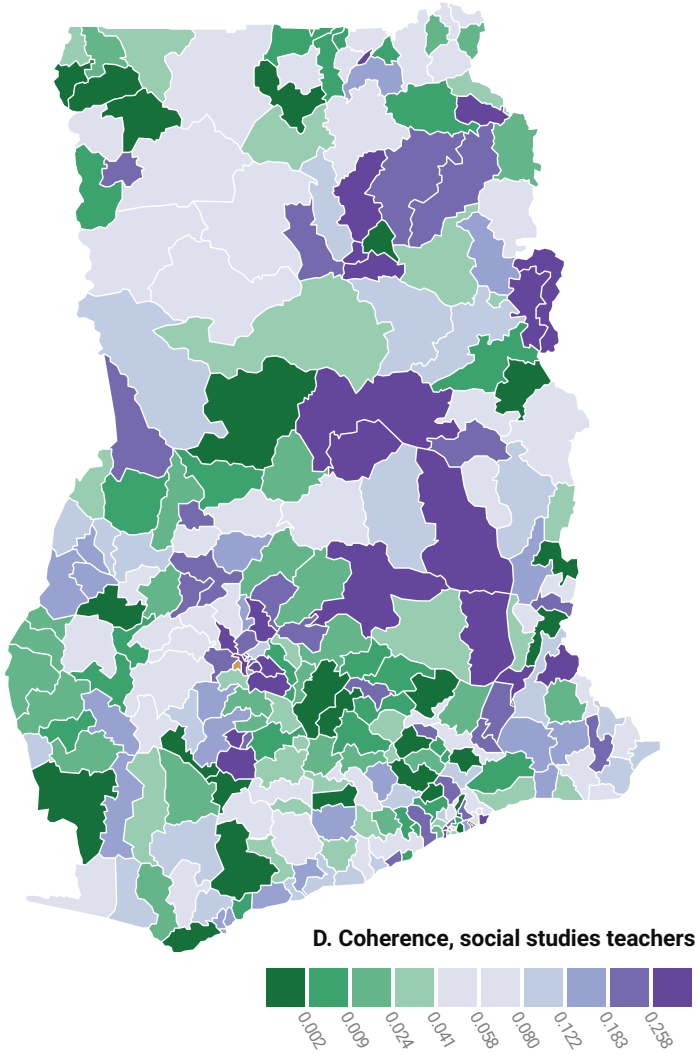
Map 6: Coherence in the allocation of (A) English language, (B) general science, (C) mathematics and (D) social studies teachers at the JHS level by district, 2022/23







C. Coherence, mathematics teachers



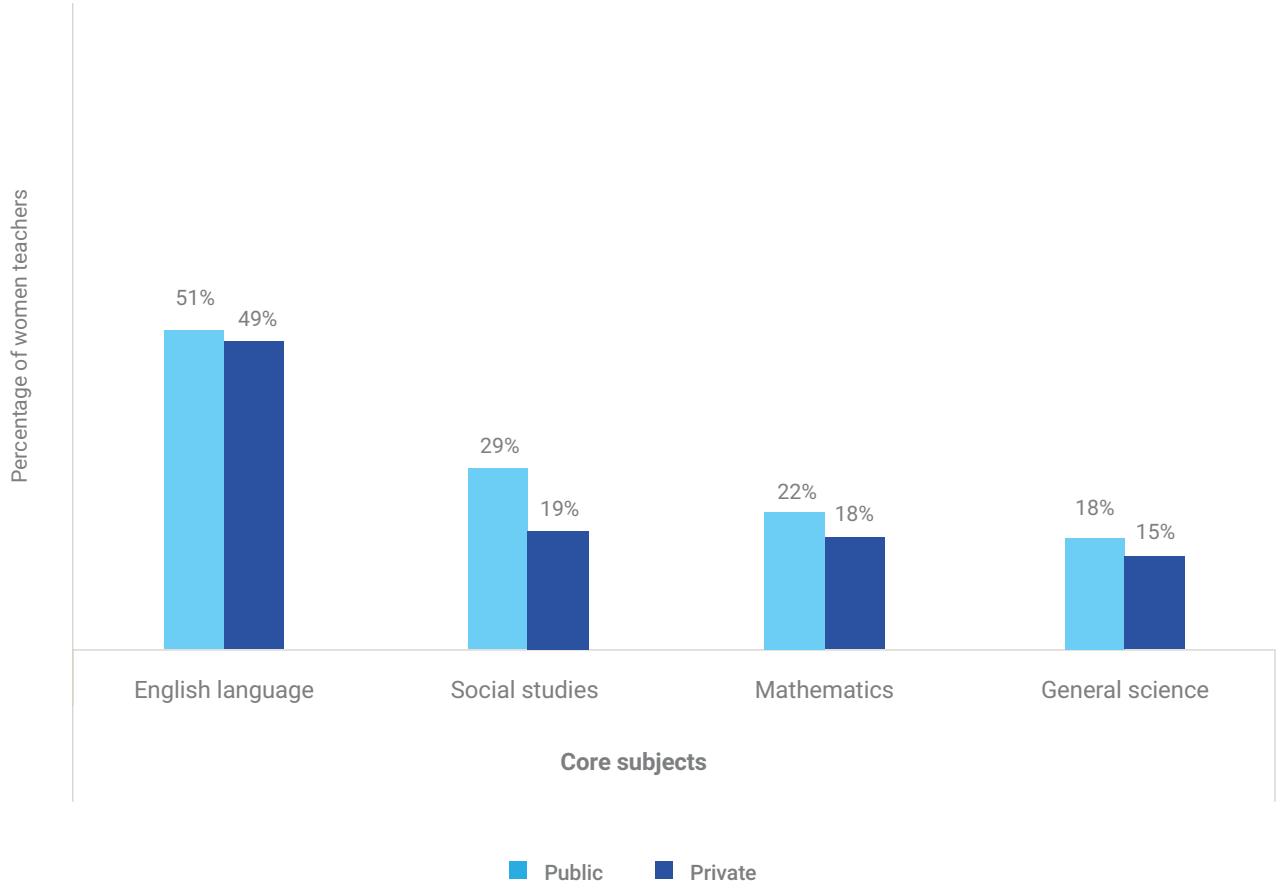
D. Coherence, social studies teachers

Source: Authors' calculation from EMIS 2022/23

Notes: Darker green colours represent low coherence in the allocation of subject teachers, whereas shades of purple represent higher coherence. The maps only include public schools with JHS sections. This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers

When analysing the gender composition of the teaching workforce by subject, a significant segregation stands out in certain subjects. Representing only 32 per cent of the JHS teaching force, women are more represented in English. In contrast, the lowest shares (below 25 per cent) are observed in the STEM subjects of mathematics and general science. This gender imbalance is more pronounced in private schools, where the proportion of women teachers in all core subjects is consistently lower compared to public schools, as shown in *Figure 20*.

Figure 20: Share of women teachers by core subject and school ownership, 2022/23



Source: Authors' calculation from EMIS 2022/23

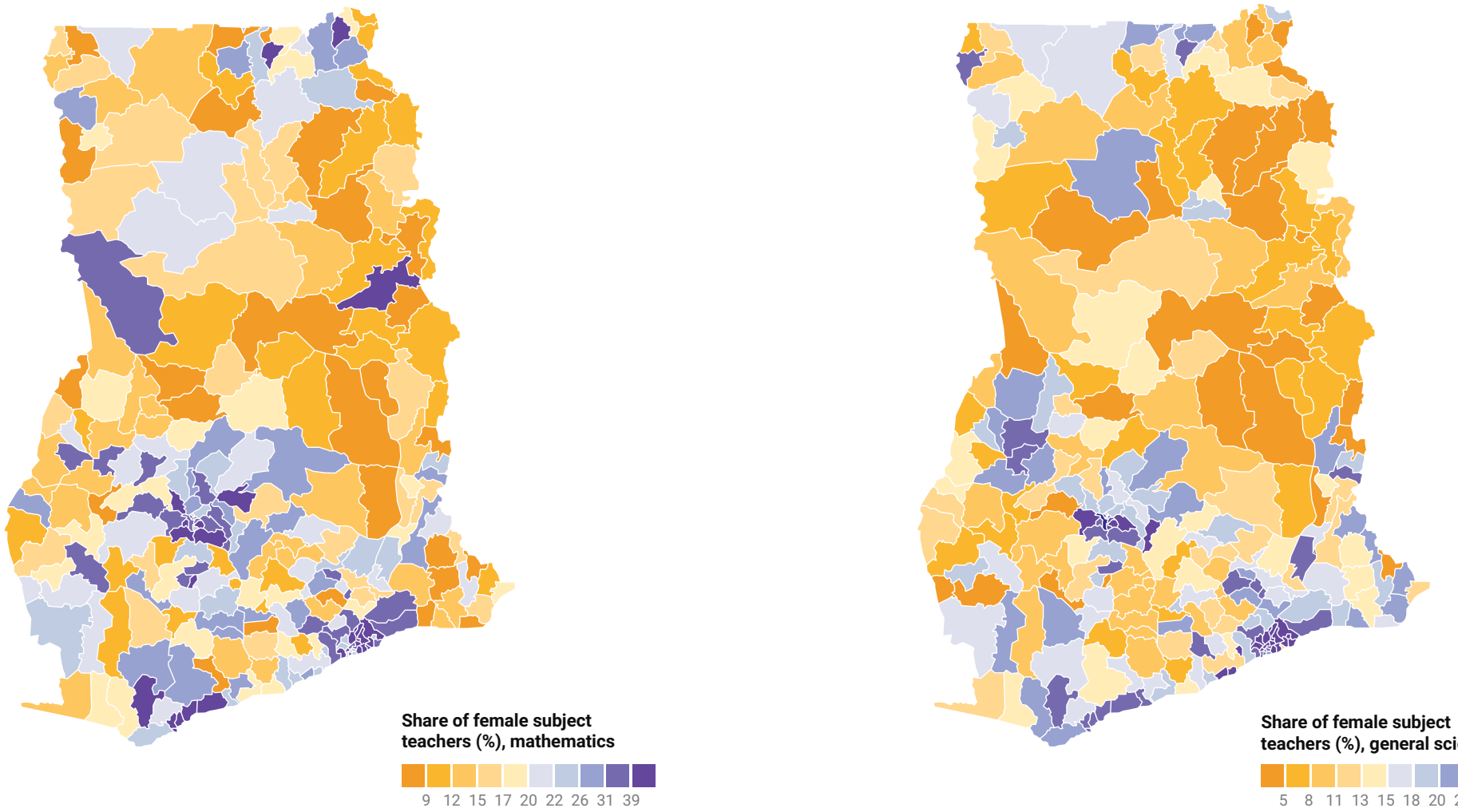
Women STEM teachers are largely concentrated in Ghana's cities. Students in the country's most densely populated and urban areas benefit from having the greatest representation of women in STEM subjects (*see Map 7*). For example, over 35 per cent of general science teachers are women (almost twice the national average) in the Cape Coast, Kumasi, Sekondi-Takoradi and Tema metropolitan areas. Conversely, rural and remote schools – particularly

those in the northern regions – struggle to attract and retain women STEM teachers. In the 2022/23 academic year, there was not a single women mathematics teacher in the districts of Mion and Zabzugu (Northern region), Sene East (Bono East region), Akatsi North (Volta region) and Yunyoo-Nasuan (North East).[49]

Despite broader regional disparities, some districts stand out as positive exceptions. Among all districts, Bolgatanga of the Upper East region is the only one in the country's five northern-most regions to have shares of women STEM teachers comparable to the more urban districts of the southern regions. In Bolgatanga, 39.7 per cent of mathematics teachers and 29.7 per cent of general science teachers are women – well above national and regional averages. Further research into the teacher management and deployment practices in Bolgatanga may unearth the drivers behind this result.

49 Similarly, in the 2022/23 academic year, there was not a single women general science teacher in the districts of Karaga and Mion (Northern), Suaman (Western North), Tempane (Upper East), Ayawaso North (Greater Accra), East Gonja (Savannah), Sene East (Bono East), North Dayi (Volta) and Banda (Bono).

Map 7: Share of women teachers in the JHS subjects of mathematics (left) and general science (right) by district, 2022/23



Source: Authors' calculation from EMIS 2022/23

Notes: Darker purple colours represent districts with larger shares of female STEM teachers. The maps only include public schools with JHS sections. This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers

Having women STEM teachers is important for encouraging girls and young women to pursue further education and careers in the sciences. Teachers play a critical role in shaping students' self-perceptions and aspirations, with women teachers particularly affecting adolescent girls. Emerging evidence suggests that women teachers can serve as role models and help shape the goals of adolescent girls, including raising the odds that girls enrol in science and mathematics classes at university and pursue a career in STEM fields (Dee, 2007; Lim and Meer, 2020). Ensuring that more girls see themselves reflected in their STEM teachers can help challenge stereotypes, expand aspirations and contribute to narrowing gender gaps in science and technology.

Relating teacher deployment to learning outcomes

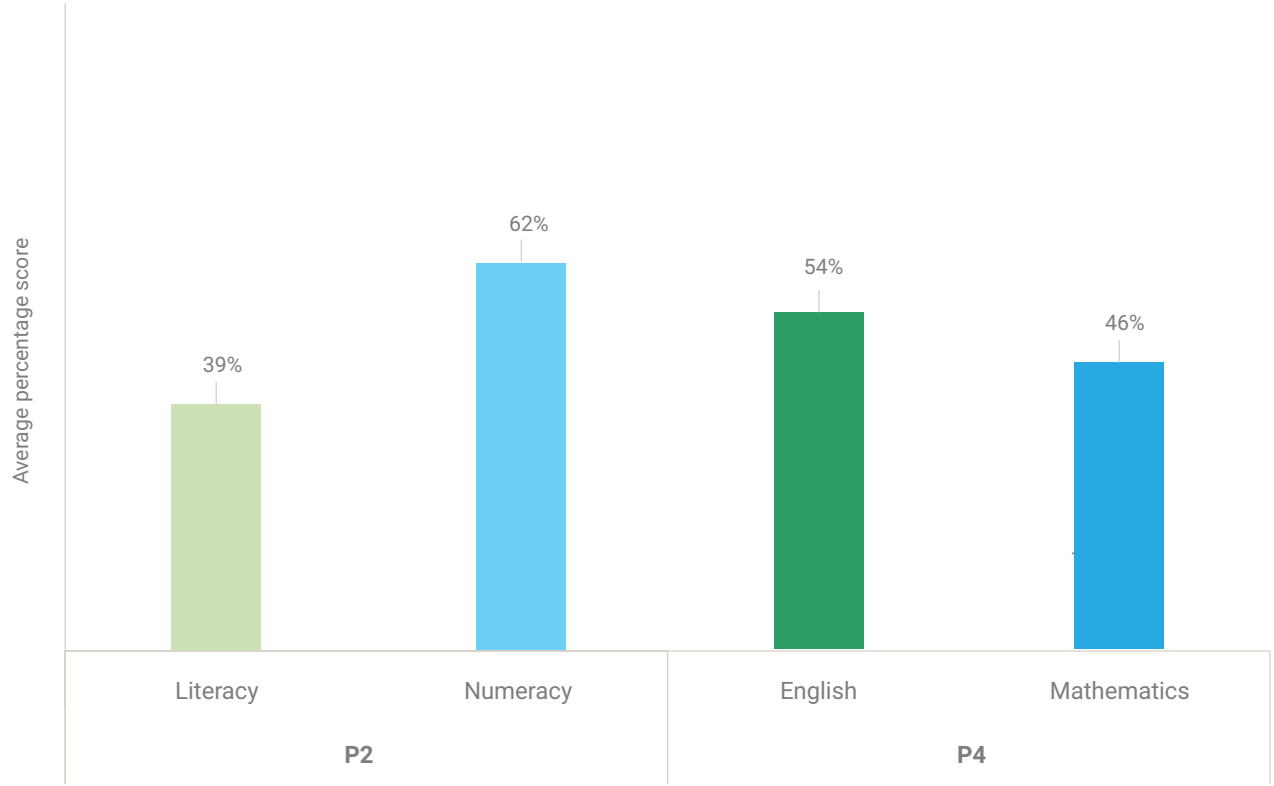
3.11 Higher PTR is negatively related to overall learning

This report provides strong evidence of the challenges in teacher deployment in Ghana, which have consequences on multiple fronts – one of the most critical being student learning. In the case of foundational learning, the MoE began regularly assessing early grade performance with NSTs at the national level in 2021. Foundational learning is assessed at two levels: Primary 2 (P2) and Primary 4 (P4).[50]

Preliminary NST results suggest that not all primary students in Ghana are acquiring the foundational skills and knowledge required to thrive in future schooling and beyond. Specifically, *Figure 21* highlights low average achievement in the 2022 NSTs, especially in P2 literacy (39 per cent) and P4 mathematics (46 per cent). Although P2 numeracy scores were comparatively higher (62 per cent), performance across subjects suggests that many learners are struggling to acquire essential foundational learning competencies.

50 The NSTs are multiple-choice, curriculum-based assessments that are meant to present a representative measure of learners' competency in literacy and numeracy subskills. Between 2021 and 2022, two rounds of NST examinations were conducted for P4 students and one round for P2 students. Additional information on the results and methodologies for the NSTs can be accessed on the NaCCA website (https://nacca.gov.gh/national-standardised-test-nst/).

Figure 21: Average percentage scores on the P2 and P4 NSTs, 2022



Source: Authors

To examine the association between PTRs and student learning, a regression analysis was conducted, drawing on EMIS school-level administrative data from the 2022/23 academic year, and NST literacy and numeracy scores from the 2022 P2 exams.[51] Two school-level models are estimated: one with literacy as the dependent variable and one with numeracy. In both cases the independent variables include the P2 PTR and other key characteristics at the school, teacher and learner levels.

The results, represented in *Figure 22* and discussed in the following paragraphs, focus on statistically significant findings.[52] The full outputs are presented in Annex 5.

51 Due to differing school identifiers across datasets, a 'fuzzy merging' technique was used to match schools. Fuzzy merging is the process of matching two variables based on comparing strings, generally across multiple variables. In this analysis, for example, schools in the EMIS and NST datasets were matched based on school name, region and district where they are based. This method successfully linked 70.5 per cent of schools across the EMIS and NST databases. The final regression sample includes 9,601 unique schools.

52 The results represent associations between learning and school, teacher, and learner characteristics. However, they do not necessarily signal the existence of a causal link between them. The data available capture information on some, but not all, factors that influence learning. Other observed or unobserved factors, such as the socioeconomic characteristics of learners, may also influence examination performance but are not captured in the data.

First, the regression analysis confirms that larger class sizes are negatively associated with learning measured as literacy and numeracy. Specifically, a one-pupil increase in the P2 PTR is associated with a 0.2 percentage point decline in literacy and numeracy scores. Smaller class sizes could be correlated with better learning outcomes for many reasons including that teachers can provide more individualized instruction, monitor student progress more closely and adapt teaching to learner needs. Previous UNICEF research co-created with the MoE in Ghana has found similar results (UNICEF Innocenti et al., 2023b).[53]

Secondly, the analysis also surfaced other teacher-related factors associated to P2 learning levels:

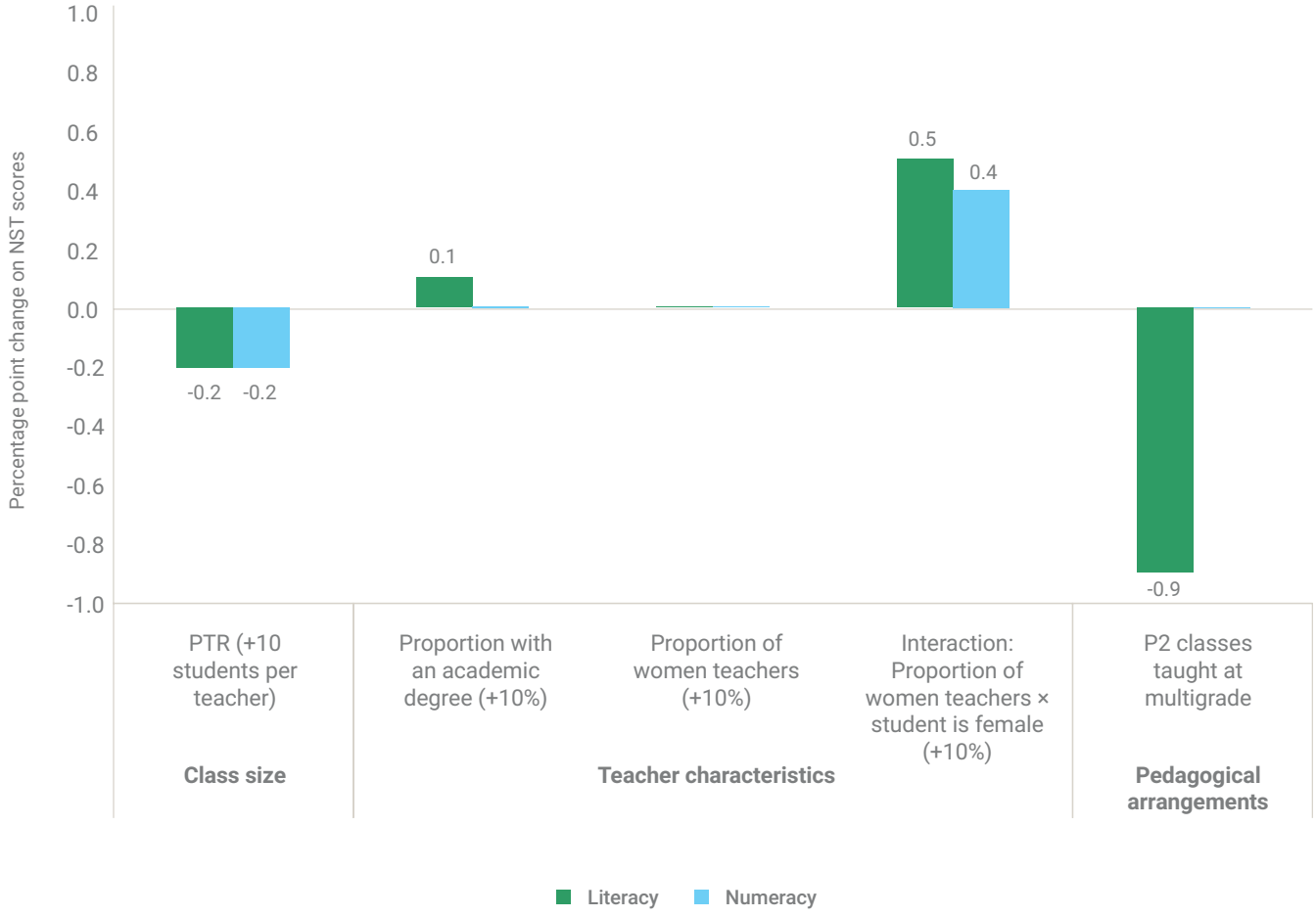
- **Teacher qualifications:** All other things equal, students taught by teachers with at least an academic degree show stronger literacy performance than those taught by less-qualified teachers.
- **Gender dynamics:** Student exam performance varies by teacher and student gender. A higher proportion of women teachers is positively correlated with girls' performance in both literacy and numeracy but shows no significant effect for boys. These trends may reflect broader gender-related dynamics within the education system rather than differences in teacher effectiveness.
- **Multigrade teaching:** Schools practising multigrade teaching – present in 15.8 per cent of schools nationally and 18.7 per cent in rural areas – scored 0.9 percentage points lower in numeracy. Multigrade teaching may dilute instructional focus, especially in foundational grades, or may be a proxy for other unobservable challenges facing these schools.

Beyond class size and teacher characteristics, several other factors are also correlated with P2 learning outcomes. Learning outcomes are also positively associated with early childhood education exposure, regular student attendance, and the availability of textbooks and other teaching and learning

53 Findings from the Data Must Speak research, co-led by UNICEF and the Ghana MoE in 2023, also reveal a modest negative relationship between PTR and student learning at the JHS level. Using four years of EMIS and BECE data (2017/18–2020/21), econometric analysis showed that higher PTRs are moderately associated with lower exam performance in English, mathematics and Ghanaian languages.

materials. In addition, schools with better infrastructure (including electricity; water, sanitation, and hygiene facilities; and learning spaces) perform better on average. Finally, private and urban schools continue to outperform public and rural schools, which is consistent with historical patterns in national assessments.[54]

Figure 22: Correlations between literacy and numeracy NST scores (percentage points) and PTRs, 2022



Source: Authors' calculations based on Ghana MoE EMIS 2022/23 and NST 2022 databases

Notes: Only correlations statistically significant at the 10 per cent level ($p < 0.1$) are shown. The values represented on the y-axis correspond to the regression coefficients associated with the variables on the x-axis.

While these findings highlight the importance of maintaining appropriate class sizes, reducing the PTR on its own is not sufficient. The global evidence on class sizes and learning outcomes remains mixed, and it varies based on

54 For a greater discussion on these factors that are not teacher-related and their correlation with early learning outcomes in Ghana, see the previous analysis of the 2022 NST results by UNICEF and the Ghana MoE (https://unicef.org/innocenti/media/10501/file/UNICEF-Innocenti-DMS-GHANA-Extention-Brief-Unpacking-2025).

country, grade level and subject. Broadly, the literature from Africa points to small but positive impacts from reducing class sizes (Sandefur, 2022, p. 88). However, if teachers continue to pursue pedagogies based on 'chalk and talk' methods and rote learning – which are known to not sufficiently support learning (Hake, 1998; Freeman et al., 2014) – then simply reducing class sizes may not impact examination performance and, more importantly, learning.

Moreover, optimizing teacher deployment could benefit the implementation of the 2018–2030 ESP and can continue efforts to strengthen classroom instruction. Ghana has deployed a multipronged strategy for supporting equitable student learning, including efforts to tailor instruction to the learning needs of individual students, via the differentiated learning (DL) programme. Targeting students in Grades 2–6 for English and mathematics, DL groups learners by ability to provide tailored instruction during regular school hours: four hours per week per subject. This approach, based on the Teaching at the Right Level model, has shown promising effects in improving foundational skills (Abdul Latif Jameel Poverty Action Lab, 2022; World Bank, 2023). Early results from the programme in Ghana are positive, though continued evaluation is needed as implementation expands (Beg et al., 2020).[55] The successful scale-up of targeted pedagogical interventions will require comprehensive support for teachers. Approaches such as DL place increased demands on the teaching force, as it relies on frequent formative assessments of learners as well as modifying the pacing and content of the curriculum. Given the increased workload placed on the teachers, pre-service training combined with a comprehensive in-service training and professional development strategy will be critical in institutionalizing improved pedagogical approaches.

55 UNICEF supports the initiative by monitoring programme fidelity and addressing implementation challenges, such as managing large class sizes (Valenza et al., 2025). Currently, DL is active in over 10,000 public basic schools and is being scaled nationally through the World Bank–supported Ghana Accountability for Learning Outcomes Project (GALOP) programme.

CHAPTER 4

Conclusion and policy recommendations

The Government of Ghana is committed to giving every child the opportunity to succeed and contribute to national development. Strengthening human capital, including improving education quality at all levels, is key for accelerating human capital development and economic transformation in Ghana.

Teachers are key to improving student learning. But the inequitable distribution of teachers across and within schools contributes to significant disparities in teaching and learning conditions. Reducing class sizes is a key enabling factor in improving learning. In Ghana, larger PTRs are negatively associated with learner performance in both primary Grade 2 and in JHS (UNICEF Innocenti et al., 2023b; UNICEF Innocenti et al., 2025). Teachers in smaller classrooms can provide more individualized attention to learners to improve their teaching practices, including monitoring progress, providing frequent and formative feedback, and adapting the curriculum to learner levels.

While the country's basic average PTR of 32:1 aligns with globally recognized best practices, the aggregate PTR figure masks differences across regions, districts and schools. Teacher allocation disparities are one of the main constraints to providing high-quality teaching and learning to all children.

Key findings:

- Inefficiencies in teacher allocation in Ghana are compounded by unclear and inefficient deployment and transfer processes, both characterized by frequent interference and non-compliance. There is no comprehensive policy or legal framework for teacher deployment and management.

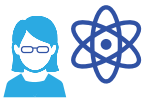
- Around 20 per cent of districts are experiencing acute teacher shortages, with an average PTR at the primary level of more than 35:1 (the MoE's national target). The Central and Greater Accra regions experience the most critical teacher shortages and deployment challenges; these provinces have the greatest share of districts with both (i) a high PTR and (ii) a low coherence between teacher deployment and learner enrolments at the primary level.

- With some schools opting for multigrade instruction, others facing large class sizes, and a third group facing both, Ghana (like other countries in sub-Saharan Africa) is confronted with the need to identify viable options to make the most equitable and effective use of its limited teacher supply.

- Rural schools have more acute teacher shortages in teacher allocation, and the highest shortage of women teachers, compared to urban schools. Women teachers experience additional constraints when deployed to rural areas, including concerns around safety and security, difficulties in mobility, and issues meeting hygiene and sanitation needs. The lack of women teachers in rural areas has important implications for gender equitable education access and girls' education.

- Inequities in teacher distribution are largely concentrated within districts, with many also showing low coherence. Rebalancing teachers within districts offers a practical approach to improving teacher deployment.

- While there are differences in class sizes across grades within schools, these differences are relatively small in the public sector. However, even where differences in class sizes are moderate, the early grades remain a critical period for learning, as any deficits in foundational literacy and numeracy are difficult to remediate in later years.



- At the JHS level, women teachers are underrepresented in the STEM subjects, particularly disadvantaging rural schools. Evidence points to the key role that women teachers play in shaping education outcomes (as well as the broader aspirations of adolescent girls), underscoring the importance of women representation in STEM fields.

Policy recommendations:

To strengthen equitable access to a qualified teacher workforce:

1. Prioritize the use of granular data and prioritize districts with the most acute and persistent shortages. Teachers, qualified teachers and women teachers are distributed unevenly across basic schools in Ghana. Policymakers tasked with teacher recruitment decisions are encouraged to target resources toward the districts most in need (those with higher PTRs or lower coherence in teacher allocation). This will have the highest return in terms of reducing overall class sizes and improving learning conditions. Additionally, the MoE can leverage and improve upon the forthcoming GES-MIS to better enable grade-level specialization, subject specialization and language match during teacher deployment. Resources should also be identified and protected for conducting additional research into issues of language match and identifying sustainable actions for advancing the current LOI policy.

2. Calibrate incentives and support to compensate teachers for working in difficult-to-staff schools. Global evidence shows that strengthening incentive structures (including a package of financial and non-financial incentives) combined with better housing support and career progression opportunities can help offset some of the costs of serving in challenging zones (Evans et al., 2022).
    a. Financial incentives: The MoE has already pledged to introduce incentive packages for teachers serving in hardship or remote schools through the Deprived Area Allowance. To maximize its impact, the incentive scheme should be carefully targeted to schools facing the most acute staffing challenges, regularly monitored to ensure it reaches intended beneficiaries, and implemented with fidelity to maintain teacher confidence and trust. Three key principles underpin effective incentive regimes:

(i) Supplemental income should represent a substantial share of the teacher's total income (Evans et al., 2022). Along with offsetting the logistical costs of serving in remote areas, incentives should also provide a premium to compensate for the physical and socioemotional difficulties of relocation.

(ii) Ensure timely and reliable incentive payments. Implementation challenges that lead to payment delays may blunt the impact of incentives (Evans et al., 2022). Easing payment mechanisms, such as through electronic or mobile payments, can reduce the logistical burden on rural teachers who may have to travel long distances to withdraw salaries.

(iii) Communicate incentive structures and bonus payments clearly and frequently to teachers. Existing and new teachers should be aware of the bonus structure, including understanding which schools qualify and the size of the wage premium.

b. Non-financial incentives: Promising practices should be considered to reduce the physical constraints that teachers face in remote areas:

(i) Establish an accelerated teacher career and progression framework for rural teachers. While the existing evidence on this remains mixed, non-financial incentives – such as rapid promotion pathways in return for working in remote areas – may reinforce financial rewards. Behavioural interventions, such as promoting service in rural schools as a public duty to boost morale, may also improve retention in challenging schools (Ajzenman et al., 2021a; Ajzenman et al., 2021b).

(ii) Invest in socioeconomic development in rural areas, including in physical infrastructure near schools. While these investments have broader fiscal implications for the government, policymakers should consider them where they are feasible.

3. Provide targeted support for women teachers, including incentive packages tailored to meet their needs. In the short term, policies to improve gender equity may cover providing childcare, establishing quotas for leadership positions for women school heads, enacting laws and policies outlawing discrimination, and enforcing laws against gender-based violence. Additional long-term measures include investing in school infrastructure, such as electricity access and sanitation facilities. Evidence from South Asia and Africa suggests that offering a mix of

financial and non-financial incentives improves the retention of women teachers (Evans and Acosta, 2023; Fagernäs and Pelkonen, 2012; Gad, 2015; Kamere et al., 2019). In addition, the shortage of women teachers in STEM subjects needs to be addressed:

a. Girls and young women should be encouraged to pursue STEM pathways in school and future careers. To ensure more children can succeed in and pursue employment in the STEM field, it is also important to address various facets of gender bias in the classroom and how such biases are communicated through TLMs, pedagogies, etc. In order to encourage more female learners to pursue science-related careers, the government can invest in targeted education, recruitment and professional development efforts to increase the supply of and support women STEM teachers.

4. Within-district teacher transfers can be the fastest way to equalize learning conditions across schools, especially for disadvantaged schools in rural schools. Redeploying teachers within the subdistricts that experience the largest imbalances can also rapidly equalize learning conditions while respecting teacher preferences. Deploying teachers locally also reduces the risk of uprooting or displacing teachers or requiring them to travel longer distances. This increases the likelihood that teachers will stay at their assigned schools.

5. To address high rural-teacher turnover, localized recruitment from within or near the same districts could provide additional benefits, especially where teachers can work within familiar communities, thus increasing the likelihood of retention. Countries like Madagascar have implemented similar local recruitment efforts, though issues such as competition from urban schools and challenging living conditions persist (Safin, 2024). More research is needed to determine the full impact of local recruitment on retention rates and student outcomes, but this approach shows promise as a longer-term retention strategy.

To build the capacity of human resource planning, forecasting, and coordination:

1. Strengthening human resource planning, forecasting and coordination can help streamline the teacher pipeline. Human resource planning by the Government of Ghana can be improved in the following ways:

a. Strengthening coordination between the MoE and CoEs and their faculties of education: The GES HRMD unit can improve the forecasting of teacher demand by more systematically utilizing data

on existing teacher placement and attrition to target future teacher deployments. This includes working with teacher training institutions to reduce the intake in saturated fields while promoting supply in higher-demand subjects.

b. Institutionalizing a policy framework governing teacher recruitment, deployment and transfers: While the MoE has previously formulated different teacher management policies, evidence suggests that such are poorly communicated and adopted across the education system. Existing norms and expectations on teacher deployment, transfers, length of service in rural schools, and compliance with transfer orders should be formalized into one comprehensive and updated policy. This will help create a shared understanding of teacher deployment norms as well as improve transparency and accountability in how teachers are placed and transferred between schools. To ensure that new rules and processes are applied consistently and institutionalized properly, their implementation should be piloted, phased and scaled based on feedback from teachers and GES. Such policies should mandate grade-level specialization, subject specialization and language match in the teacher deployment process.

2. Identify channels in which local knowledge can be incorporated into the recently recentralized teacher deployment process. Policymakers can bring decision-making closer to communities in the following ways:

   a. Strengthen policy and data usage around within-district teacher transfers (reposting): Rebalancing teachers across schools inside a district can improve equity in learning conditions, especially for disadvantaged schools in rural schools. Deploying teachers locally also reduces the risk of uprooting or displacing teachers or forcing teachers to travel longer distances, and this increases the likelihood that teachers will stay at their assigned schools. Establishing and clearly communicating a simple, transparent process and timeline for teacher reposting can significantly improve efficiency. This should be supported by a continuously updated, centralized database that serves as a single source of truth for all placement decisions. The database should build on existing systems (e.g., GES-MIS) while also improving them to be more user friendly and oriented to meet the needs of local officials.

b. Empower and build the capacity of local actors: Local actors and community members, such as REOs and MMDE Directorates, should be consulted for their deep understanding of teacher preferences, local conditions, and physical or sociocultural barriers, especially for women teachers. Allowing school leaders and officers of the education systems' middle tier to provide input on teacher assignments can improve teacher–school fit and retention as well as mitigate the risk of teacher turnover.

Annexes

Annex 1. Additional background on teacher management and deployment

Teacher education and licensure

Teacher governance in Ghana is guided by the Conditions of Service for the Teaching Staff of the GES (2017) and the GES Collective Agreement for Teaching Staff (2020). The 2008 Education Act (Act 778) attempted to make teaching in Ghana a profession with clear codes of ethics and minimum acceptable competencies of those who get to teach at pre-tertiary institutions. In 2018, the MoE, in collaboration with UK Aid Direct, initiated a project called Transforming Teacher Education and Learning (T-TEL), which led to a development of the National Teacher Education Curriculum Framework and National Teachers' Standards. These two documents guided the development of the national teacher education programme, which set minimum professional competencies in the teaching profession, and provided a framework for teacher competencies, professional development and evaluation.

In order to become a basic education teacher in Ghana, candidates must fulfil four conditions: (i) have at least a Bachelor of Education degree (or a postgraduate education certificate for those with a degree in another field); (ii) undergo one year of induction through the NSA programme; (iii) pass the Ghana Teacher Licensure Examination (GTLE); and (iv) apply for a professional teacher license from the NTC.

Pre-service training for teachers in Ghana is a structured pathway designed to ensure that individuals entering the teaching profession are well-prepared, knowledgeable and skilled. Then NTC ensures that aspiring teachers go through a comprehensive educational and certification process that demonstrates academic excellence, practical skills and professional licensure. The preparation of teachers to teach at the basic school level takes place in postsecondary institutions, known as CoEs. There are also three universities (University of Cape Coast; University of Education, Winneba; and University for Development Studies, Tamale) that host teacher education programmes with the mandate to prepare teachers to serve at various levels, including basic education. Notwithstanding this, sometimes graduates from other universities also enter the teaching profession (Buabeng et al., 2020).[56]

56 For individuals attempting to enter the teaching progression from another field and/or with a bachelor's degree in a non-education field, a one-year postgraduate education programme has been made available to equip them with the necessary pedagogical skills and educational knowledge.

Alternative pathways to teacher education are expanding. In Ghana, teacher education has traditionally relied on regular, in-person programmes hosted at universities or CoEs, designed to offer direct interaction, mentorship and feedback in a structured, face-to-face setting. However, as educational needs diversify and technology advances, alternative pathways for teacher candidates to receive their necessary qualifications have emerged, notably distance education and sandwich programmes. Distance education programmes use digital platforms and online resources, enabling teacher candidates to pursue coursework from virtually any location – a solution particularly beneficial for those in remote or underserved areas. Sandwich programmes blend in-person instructional sessions with independent study, providing a hybrid approach.

The MoE has prioritized the training of teachers through the provision of teacher trainee allowances, although in practice access to such financial support is unclear. A labour market analysis undertaken by the Ghana Statistical Service showed that, compared to other white-collar professions, a larger share of primary and secondary schoolteachers had tertiary education; and that they are subject to several incentives, including study leave (with or without pay), healthcare, subsidized loans, invigilation and supervision allowances (World Bank, 2019). Reinstated in 2017, the teacher trainee allowance provides all teacher candidates at public CoEs with monthly disbursements of GH¢400 to pursue further education (Adade, 2025). The teacher trainee allowance has become a topic of frequent debate in the Ghanaian policy sphere: While some claim it is essential for enabling young adults from low-income backgrounds to enter the teaching profession, others argue it is an unsustainable burden on the MoE budget and diverts resources from other needs (Adam, 2025; Afrane, 2025). In 2025, the government allocated GH¢203 million for teacher trainee allowances (approximately 0.5 per cent of the projected education budget for 2025 of GH¢42.2 billion) (UNICEF Ghana, 2025). Despite constituting a large financial investment, key informant interviews through this and other co-created research between UNICEF and the Ghana MoE have called into question the effectiveness and accessibility of teacher education stipends.

Teacher training and development programmes in Ghana underwent a significant reform in 2018, when the minimum teaching qualification for professional basic teachers changed from a three-year diploma to a four-year bachelor's degree (in the education field or otherwise). The Bachelor in Basic Education serves a direct route into the teaching profession, offering comprehensive coverage of education theories, pedagogy, curriculum development and subject-specific content. While the degree had primarily been offered at universities, all CoEs were subsequently mandated and equipped to deliver the Bachelor of Education programme in affiliation with partner universities. Intended to improve quality, the raise in minimum qualifications may have inadvertently narrowed the teacher pipeline, potentially excluding many aspiring educators who face barriers in financing and attending four years of tertiary education (Opuni, 2025). Furthermore, prospective teachers are now able to specialize their degree programme by their desired grade band: early grade level (KG–P3), upper primary (P4–P6), JHS and SHS (with teachers specializing in a specific subject for the latter two).

Once student-teachers have completed their four-year Bachelor of Education degree, they are required to then spend their one-year National Service teaching in a public school, although this does not always happen in practice. As per policy, teacher candidates serving their National Service year are meant to be mentored and evaluated, compiling a portfolio of specified assignments, projects, and work achievements and being assessed on this portfolio. However, funding for these activities has yet to be allocated.[57] Through its Supported Teaching in Schools programme, the Ghanaian not-for-profit organization, T-TEL, provided student-teachers currently studying at CoEs or serving their National Service year at basic schools with a series of practical learning opportunities and pedagogical supports to aid their education and training. Although a robust impact evaluation of this programme has yet to be conducted, small-scale research studies have found that the programme generally had positive effects on student-teachers' experiences and pedagogical competencies and behaviours, although its implementation was often plagued by operational constraints (Dankwah et al., 2021; Bobi et al., 2023; Bour et al., 2025).

As of 2018, aspiring teachers must also pass a licensure exam administered by the NTC. After the completion of their National Service year, teacher-candidates are required to sit a license examination, termed the GTLE, at a registered centre. This paper-based examination assesses their readiness to teach, covering content knowledge, pedagogical skills and ethical considerations in education. Upon its first years of implementation, the GTLE measured teacher candidates' numeracy and literacy competencies, in addition to their understanding of the National Teachers' Standards. More recently, GTLE has been tailored to subject- and education-level specializations, measuring a more specific set of pedagogical and content skills and knowledge, in alignment with the newly revised National Teacher Education Curriculum Framework and National Teacher Education Assessment Policy. Obtaining this license officially recognizes the individual as a qualified professional teacher eligible to teach in Ghanaian schools. In theory, teachers need to re-license every four years, a process managed by GES human resources departments at the central and decentralized levels. In practice, adherence to this policy is unclear. In July of 2025, the MoE announced that the current GTLE system would be restructured, moving away from "solely paper-based exams" to a more comprehensive approach that "incorporates assessment, supervised practical evaluations, and structured mentorship programmes, ensuring that newly qualified teachers demonstrate not just theoretical knowledge but actual classroom competence" (Kale-Dery, 2025).

Efforts to upgrade in-service teacher qualifications have not been accompanied by the same level of financial support being offered to teacher candidates for their pre-service training. Upon the government's upgrading of the minimum teaching qualification, in-service teachers with less than a bachelor's degree are now required to upgrade their qualifications to remain in the

57 During their one-year mandatory National Service year, newly trained teachers should be allocated a National Service stipend meant to cover basic living expenses.

profession. These currently active teachers were offered to upgrade their diploma via online and hybrid certification programmes. However, this policy has never been monitored or enforced. Furthermore, financial support was not made available to help teachers in accessing such opportunities. Preliminary findings from research conducted by the MoE and UNICEF Innocenti's co-created Women in Learning Leadership indicate that many teachers still face significant financial barriers in upgrading their qualifications, with several reporting that the cost of degree programmes is a major constraint for advancing in their careers (UNICEF and Global School Leaders, forthcoming). Such findings may imply that tuition-free teacher training is either limited in scope or not fully implemented in practice.

Teacher workforce planning and budgeting

The HRMD at GES headquarters conducts an annual planning process that estimates the number of upcoming teacher vacancies. Each year, the HRMD estimates the number of teachers required to fulfil the needs of the education sector based on current enrolment statistics, expected graduates from CoEs and universities, and declared vacancies. This estimate is used to construct a proposed wage bill for the sector for the upcoming year, which then needs financial clearance from the Ministry of Finance.

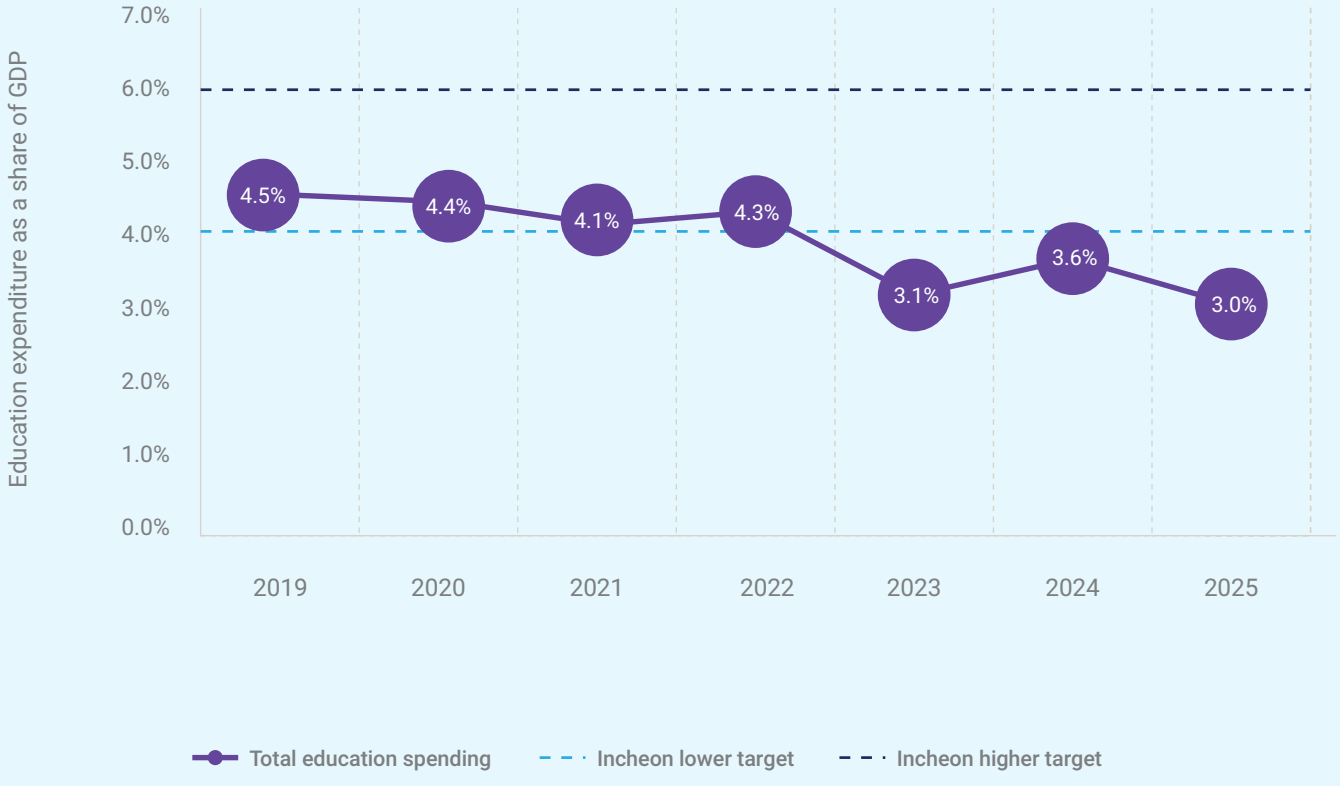
Teacher recruitment is limited by the national education budget. All recruitments are subject to financial clearance by the Ministry of Finance, who are responsible for managing the country's national budget and approving sector-specific budgets, such as that of the education sector. If schools request more teachers than the Ministry of Finance deems financially sustainable, the Ministry of Finance may deny the deployment of funding for such purposes. In the past, Ghana has used other measures to avoid increasing the wage bill for teachers, such as by deploying national service personnel to schools to supplement needs. Although total education spending in Ghana is increasing in nominal terms, real allocations are projected to decline in 2025, and education expenditure as a share of gross domestic product (GDP) has continued to fall (UNICEF Ghana, 2025). This raises concerns about how the sector will adjust the management of the teacher workforce, its greatest expense, under increasing fiscal constraints (*see Box A1*).

BOX A1

Historical trends in teacher expenditures in Ghana

Despite a rise in the school-age population, the allocation of the country's budget to education has seen a downward trend, falling below international benchmarks. After briefly recovering to its 2019 real value in 2024, the MoE's budget for 2025 is projected to decline by 24.6 per cent in real terms, reflecting a significant erosion in spending power (UNICEF Ghana, 2025). As shown in *Figure A1*, the education sector's spending as a share of GDP has been also been on a downward trend, declining from a peak of 4.5 per cent in 2019 to a projected 3 per cent in 2025, which is significantly lower than the 4–6 per cent outlined in the Incheon Declaration and Framework for Action (UNICEF Ghana, 2025). Despite the importance of foundational learning, and the priority that the Government of Ghana places on education in general, the share of the MoE's budget allocated to basic education decreased from 39 per cent in 2019 to 20 per cent in 2024 – although its share of the MoE budget is expected to increase to 24 per cent in 2025 (UNICEF Ghana, 2025). This signals a decline in real per capita public spending on education, which can limit the government's ability to recruit qualified teachers and procure adequate infrastructure for quality education.

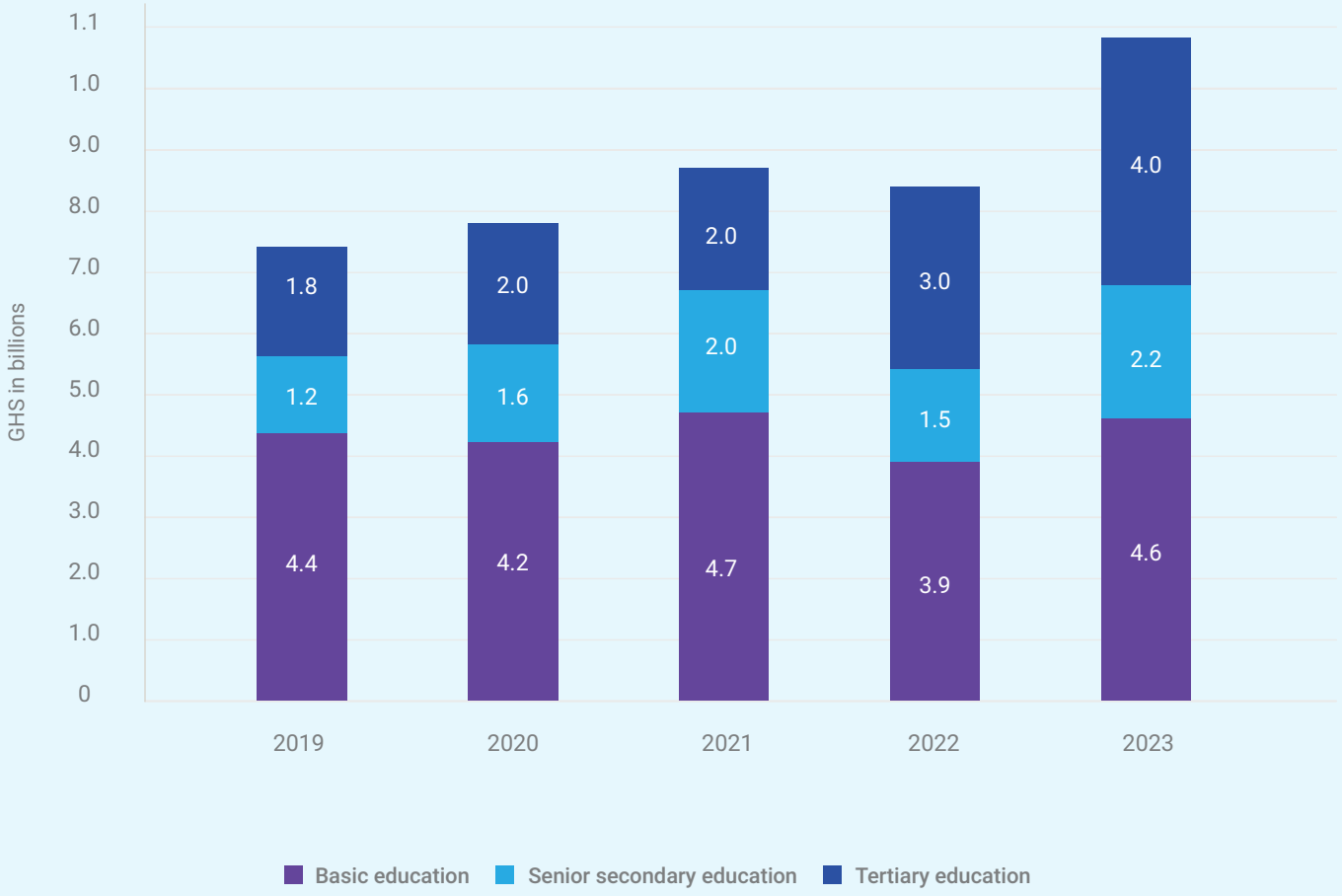
Figure A1: Total education expenditure as a share of GDP, 2019–2025



Source: Adapted from UNICEF Ghana, 2025

In Ghana, a significant proportion of the education budget is spent on staff compensation, with little money allocated to goods and services. Compensation expenditure constitutes the greatest cost for the education sector, projected to account for 88 per cent of the MoE budget in 2025 (UNICEF Ghana, 2025). There has also been a gradual increase in spending on staff compensation within the education sector between 2019 and 2023 across all levels, primarily driven by a major increase in management and administration salaries (UNICEF Ghana, 2024; *see Figure A2*). This increasing concentration of spending on salaries has occurred even as the MoE's overall budget has declined in real terms, implying that other critical inputs – such as teaching and learning materials, infrastructure and teacher training – are being increasingly constrained. While evidence from 2020 found that teachers' monthly salaries are comparable to those of other formal sector workers with similar levels of education and experience, remuneration in the education system is often delayed (Evans et al., 2020; Akseer and Játiva, 2021).

Figure A2: Compensation allocation across education levels in Ghanaian Cedis (GHS), 2019–2023



Source: Ghana, MoE, forthcoming

The large share of education spending devoted to staff compensation within the context of declining real-term budget allocations underscores the need to refocus on improving the efficiency of teacher management, preparation and deployment. As the MoE's greatest expense, investments in the teacher workforce are the sector's strongest lever for enhancing instructional quality and student learning outcomes. However, salary expenditures should not come at the expense of other critical inputs. Effective teaching requires adequate facilities and sufficient teaching and learning materials. In addition, evidence shows that the quality of school infrastructure and the availability of learning supplies are key determinants of student attainment and improved outcomes (Barrett et al., 2019). Moreover, because teacher compensation absorbs the majority of the education budget, any continued decline in overall sector spending will almost certainly affect salaries, job security and the timely disbursement of remuneration.

Although less frequently, the MoE conducts teacher workforce planning activities, with the goal of predicting longer-term staffing needs for the sector. During key moments in sector planning such as during the development of the ESP and the medium-term education budget, the Planning, Budgeting, Monitoring and Evaluation Directorate at the MoE calculates an estimate of the number of classrooms needed to educate all incoming students, based on population projections, enrolment trends and estimates of teachers likely to retire in the upcoming academic years.[58] From this estimation, the MoE estimates the number of teachers needed for the next period, and it uses such estimates to inform its medium-term budget and wage bill.

Teacher career pathways and professionalization

Several recent policy reforms initiated by the NTC and the GES have sought to elevate the teaching profession's status and to maintain professional and ethical standards, such as the introduction of mandatory teacher licensing and higher entry qualifications. Expectations for all teachers in Ghana are encapsulated in the National Teachers' Standards, guidance drafted by the NTC that "set out the minimum levels of practice that all qualified teachers must reach by the end of their pre-service teacher education course" and "provide the framework for future professional and career development for all teachers" (NTC, 2017, p. 6). The NTC is currently reviewing and revising the National Teachers' Standards, with an aim to build greater alignment with recent curriculum changes, national goals and values, and international standards for high-quality teaching. The GES also has a Code of Conduct for teachers outlining expected professional behaviour. For example, the Code states that teachers who are absent for 10 consecutive days may face dismissal (Agbeh, 2025):

58 The retirement age in Ghana is generally 60 years; however, some may opt for early voluntary retirement.

> *Historically, teacher recruitment in Ghana was relatively straightforward; subsequent to a successful completion of a teacher education programme at the Universities or Colleges of Education, student teachers were absorbed directly into the GES. Available data indicate that while this practice ensured numbers, it did not always guarantee quality. Over time, as the teacher profession struggled with issues of low prestige, inconsistent standards and attribution, among others, the Government of Ghana, through the NTC, began to introduced reforms to professionalize teaching in Ghana.*
>
> – Agbeh, 2025, p. 28

Ghana places all pre-tertiary teachers, regardless of their education level, on the same ranking scheme and pay scale, offering a promising pathway for ensuring experienced teachers at foundational levels of education. For example, depending on their qualifications and years of experience, a nursery teacher in Ghana can be at the same rank and receiving the same salary as a class teacher at the primary level or a mathematics subject teacher at the JHS level. Without strong professional or financial incentives to shift grade levels, Ghanaian teachers may face fewer structural pressures than their peers in some neighbouring countries to move away from teaching in the earliest years of formal education. However, other factors (such as perceptions of workload, classroom management demands and the greater autonomy of older students) may still influence teachers' preferences for upper-grade postings. While the uniform ranking and pay structure in Ghana may help reduce financial disincentives for remaining in early-grade classrooms, there is limited empirical evidence on how this policy feature shapes teachers' actual deployment choices across grade levels.

While Ghana has prioritized teacher professional development through policy and regulatory reforms, questions of access and quality remain. Teachers in Ghana are encouraged to pursue further education and training to enhance their competencies, which in turn positions them for career advancement within the GES framework. The Continuous Professional Development (CPD) Framework, designed by the NTC, formalizes a teacher's responsibility and commitment to being a professionally competent and relevant practitioner. With the passage of the Pre-Tertiary Professional Development and Management Policy of 2012, the MoE was mandated to link CPD participation to teacher ranking and promotions, salary increments and licensure – although such linkage has yet to be fully actualized. Currently, the accumulation of the required CPD points is a prerequisite for the renewal of teaching licenses.[59]

59 Currently, teachers that have failed to achieve 20 CPD points by the end of every academic year between licensing periods (typically four years) fall 'out of good standing' and are subject to lose their teaching license. The NTC is responsible for tracking all teachers' accumulated CPD points, currently logged in a database separate from and unlinked to the EMIS and GES-MIS.

The NTC CPD framework outlines that teachers are expected to accumulate a specified number of CPD points within a given period. These points are earned through various professional development activities. In-Service Education and Training is organized at the district, cluster, and school levels through workshops, seminars, and courses. The Information and Communication Technology in Education policy of 2015 kickstarted the use of distance learning for teacher pre-service and in-service, the latter now formalized into the Teacher Portal Ghana.[60] There are also expectations that school leadership will organize weekly Professional Learning Community sessions (a platform for teachers to meet and discuss pedagogical strategies and issues) and provide targeted coaching and mentorship to their teachers.

In collaboration with GES and various teachers' unions, the NTC is currently updating the Mentoring and Coaching Framework for pre-tertiary teachers in Ghana aiming at placing greater emphasis on the teaching of foundational learning, socioemotional learning, and twenty-first-century skills such as creativity, problem-solving, communication, collaboration and digital literacy (Ahiabenu, 2025). Despite these efforts, the quality of teacher CPD in Ghana ranges significantly depending on one's school and region (Abakah et al., 2022; Salifu et al., 2024; Dzikunu et al., 2025). While the development of the Teacher Portal Ghana has extended teachers' access to a broader range of CPD opportunities, its effectiveness in improving teacher practice and knowledge has yet to be evaluated.

Finally, regarding teacher assessment, procedures for teacher performance evaluation exist but are not standardized, leading to discrepancies in how teacher quality is monitored across the country. Performance evaluation mechanisms assess the effectiveness of education personnel and aim to ensure accountability in the Ghana education system. Head teachers are expected to carry out internal inspections and supervise teaching and learning as one of their day-to-day responsibilities. This is done through classroom observations and after-class discussions, regular review of teachers' lesson notes, random spot checks to confirm teacher attendance and time-on-task, and evaluation of student learning outcomes (Barffour and Ampofo, 2021). However, the quality and regularity of such practices depend greatly on the profile of the head teacher (UNICEF Innocenti et al., 2024). External teacher performance appraisal is one of the responsibilities of REOs and MMDE Directorates, but has been criticized as focusing only on teachers due for promotion and having no meaningful impact on teacher quality (Annan et al., 2023). Teacher performance appraisal results are rarely disseminated beyond the school (Barffour and Ampofo, 2021).

60 The NTC Ghana Teacher Portal can be accessed at this link: https://tpg.ntc.gov.gh/.

Annex 2. List of high-priority districts facing significant teacher deployment issues

Table A1: High-priority districts and corresponding coherence and PTR values at the primary level, 2022–2023

Region	District	Coherence (R^2)	PTR
Ashanti	Adansi Asokwa	0.37	35.8
	Asante Akim North	0.41	39.4
	Atwima Mponua	0.28	35.9
	Kwadaso	0.46	41.0
Bono	Wenchi	0.47	35.9
Bono East	Kintampo North	0.33	44.7
Central	Agona West	0.24	38.9
	Asikuma-Odoben-Brakwa	0.36	39.1
	Assin Fosu	0.29	39.5
	Assin North	0.14	37.9
	Assin South	0.23	40.4
	Awutu Senya	0.15	43.4
	Awutu Senya East	0.02	43.6
	Ekumfi	0.03	43.6
	Gomoa West	0.31	48.2
	Twifo Atti-Morkwa	0.22	51.2
	Twifo Hemang Lower Denkyira	0.23	42.1
	Upper Denkyira East	0.18	50.2
	Upper Denkyira West	0.25	49.7
Eastern	Abuakwa South	0.48	38.9
	Akyemansa	0.43	39.3
	Ayensuano	0.47	37.4
	Kwaebibirem	0.18	35.3
	Kwahu South	0.49	35.9
Greater Accra	Ablekuma Central	0.46	50.3
	Ablekuma West	0.47	37.5
	Ayawaso East	0.37	37.5
	Ayawaso North	0.40	64.8
	Ga Central	0.43	38.5
	Ga North	0.31	39.5
	Ga West	0.21	53.5
	Korle Klottey	0.16	35.1
	Shai Osudoku	0.27	51.8
	Weija Gbawe	0.45	37.6

Region	District	Coherence (R^2)	PTR
North East	East Mamprusi	0.47	55.7
	Yunyoo-Nasuan	0.34	61.1
Northern	Gushegu	0.32	46.7
	Mion	0.38	55.2
	Nanumba North	0.31	57.6
	Nanumba South	0.39	48.3
	Saboba	0.46	53.6
	Zabzugu	0.35	51.8
Savannah	Central Gonja	0.49	45.3
Upper West	Sissala East	0.23	38.5
	Sissala West	0.48	41.1
Volta	Akatsi North	0.39	40.9
	Keta	0.48	43.3
Western	Ellembelle	0.36	38.7
	Nzema East	0.02	55.9
	Wassa Amenfi Central	0.44	44.4
	Wassa Amenfi East	0.43	48.2
Western North	Aowin	0.45	42.3
	Suaman	0.38	45.1

Source: EMIS 2022/23

Notes: At the primary level, 'high-priority' districts are defined as those that have an average PTR of 35:1 or higher (the national MoE target) and a coherence coefficient (R^2) of under 50 per cent.

Table A2: High-priority districts and corresponding coherence and PTR values at the JHS level, 2022–2023

Region	District	Coherence (R^2)	PTR
Central	Upper Denkyira West	0.30	32.0
	Ga North	0.22	30.7
Greater Accra	Ga West	0.08	31.9
	Korle Klottey	0.22	33.4
Upper West	Lawra	0.49	33.4
Volta	Keta	0.29	30.4
Western	Nzema East	0.28	35.6
	Wassa Amenfi East	0.49	30.1

Source: EMIS 2022/23

Notes: At the JHS level, 'high-priority' districts are defined as those that have an average PTR of 30:1 or higher (the national MoE target) and a coherence coefficient (R^2) of under 50 per cent.

Annex 3. Regression output table for teacher deployment analysis

Table A3: Predictive models of teacher deployment, 2022–2023

Variable	(1) Number of teachers	(2) Number of teachers with at least a degree	(3) Number of women teachers
Student characteristics			
Number of basic students	0.007***	0.004***	0.004***
Proportion of female students	0.575	2.264***	2.157***
Teacher characteristics			
Proportion of women teachers	2.278***	1.497***	
Proportion of teachers with at least a diploma	–2.758***		–1.864***
Proportion of teachers with at least a degree	1.415***		1.716***
Pedagogical practices and resources			
Number of permanent classrooms	0.199***	0.118***	–0.130**
Textbook-to-student ratio	0.065	–0.029	0.071**
Number of permanent libraries	0.105	0.056	0.090*
Number of permanent science laboratories	3.518***	3.555***	2.253***
Number of permanent computer laboratories	0.024	0.017	–0.050
School characteristics			
Number of permanent staffrooms	0.440**	0.312**	0.023
Number of permanent teacher quarters	0.148	0.097	0.069
Provides daily school meals	0.257	–0.044	0.814***
Has access to water source	–0.160	–0.057	–0.181
Has access to functional electricity	0.647***	0.560***	0.436***
Has access to functional Internet	0.283**	0.001	0.106
Proportion of classrooms in need of major repairs	0.061	0.020	0.051
Is a part of the GALOP programme	–0.593***	–1.209***	0.267**
Road is accessible year-round	–0.101	0.359***	0.261**
Is less than 5 kilometres from head teacher's residence	–0.001	–0.039	–0.011
Is less than 10 kilometres from nearest school	0.197	0.022	0.270**
Is less than 15 kilometres from MMDE Directorate	1.038***	1.145***	1.126***
Is private	–7.152***	–7.954***	–3.179***
Is located in a rural area	–1.680***	–2.313***	–2.017***
District fixed effects	Yes	Yes	Yes
Constant	7.633***	3.152***	5.520***
Observations	29,255	29,255	29,255
R-squared	0.472	0.562	0.479

Source: Calculation by authors from EMIS 2022/23

Notes: ***p < 0.01, **p < 0.05, *p < 0.1

Annex 4. Comparison of characteristics between all public basic schools and the analytical sample used for grade-level PTR analysis

Table A4: Characteristics of all public basic schools and the analytical sample used for grade-level PTR analysis, 2022–2023

Sample characteristics	School sample with those practising multigrade instruction	School sample without those practising multigrade instruction
Number of schools in sample	22,036	16,854
Share of rural schools	74.9%	71.8%
Share of schools in Ahafo	2.7%	2.9%
Share of schools in Ashanti	17.4%	18.6%
Share of schools in Bono	4.5%	4.9%
Share of schools in Bono East	5.0%	5.1%
Share of schools in Central	7.4%	7.3%
Share of schools in Eastern	11.2%	11.1%
Share of schools in Greater Accra	5.0%	5.5%
Share of schools in North East	2.5%	2.0%
Share of schools in Northern	9.2%	7.9%
Share of schools in Oti	3.5%	3.1%
Share of schools in Savannah	3.1%	2.5%
Share of schools in Upper East	6.3%	6.7%
Share of schools in Upper West	6.1%	6.4%
Share of schools in Volta	6.0%	5.7%
Share of schools in Western	5.8%	5.7%
Share of schools in Western North	4.5%	4.5%
Average number of student enrolments	277	287
Average pupil–teacher ratio (PTR)	31.8	30.2
Average pupil–qualified teacher ratio (QPTR)	60.3	56.9
Average proportion of women teachers	43.4%	46.0%
Share of schools practising multigrade instruction	23.5%	0.0%

Source: Authors' calculations based on Ghana MoE EMIS 2022/23

Annex 5. Regression output table for student learning analysis

Table A5: Regression output table model of average NST P2 scores, 2022

Variables	Literacy	Numeracy
Student characteristics		
Proportion of female students	0.506	–0.322
Proportion of students that attended the last level of kindergarten	6.927***	9.003***
Proportion of students above the appropriate age for P2	–0.904***	2.468***
Proportion of P2 students sitting exams	2.111***	2.083***
Student attendance (from exemplar month of February)	0.908**	0.922**
Teacher characteristics		
Proportion of women teachers	–0.876	–1.231
Interaction term: Student is female multiplied by proportion of women teachers	4.880***	4.161***
Proportion of teachers with at least an academic degree	1.487**	0.469
PTR	–0.016***	–0.017***
Pedagogical practices and resources		
P2 classes taught as multigrade	0.225	–0.874***
Primary grades operating on the shift system	0.038	–0.013
Textbook-to-student ratio	0.348**	0.147
Proportion of P2 classes that operate in open-air classrooms	–0.329	–0.191
Number of writing places per student	0.271*	0.127
School has a library	1.151***	1.394***
School has a computer laboratory	2.188***	1.079***
School has a science laboratory	2.165**	0.302
School has a curriculum leader	0.028	0.099
School characteristics		
Has an available source of water	0.0113	0.427*
Provides students with meals	–1.614***	–1.086***
Number of toilets per student	0.116***	0.018
Has access to functional electricity	1.207***	0.953***
Has a staffroom	0.581***	0.136
Is part of the GALOP programme	–0.001	0.174
Total number of students enrolled in primary	0.006***	0.003***
Has a preschool/nursery section	6.838***	3.801***
Has a kindergarten section	–0.133	0.009
Has a JHS section	0.758***	0.428
Is located on a tarred road	0.748***	0.333

Variables	Literacy	Numeracy
Is less than 5 kilometres from head teacher's residence	0.607***	0.532**
Is less than 10 kilometres from the nearest primary school	0.318	0.673
Is less than 10 kilometres from the district education office	1.628***	1.363***
Is private	12.450***	5.359***
Is located in a rural area	–3.030***	–2.426***
District fixed effects	Yes	Yes
Constant	22.040***	49.040***
Observations	19,199	19,199
R-squared	0.491	0.391

Source: Authors' calculations based on Ghana MoE EMIS 2022/23 and NST 2022 databases

Notes: ***p < 0.01, **p < 0.05, *p < 0.1

References

Abakah, Ellen, Jacqueline Widin and Edward K. Ameyaw, 'Continuing Professional Development (CPD) Practices Among Basic School Teachers in the Central Region of Ghana', *SAGE Open*, vol. 12, no. 2, 30 April 2022.

Abdul Latif Jameel Poverty Action Lab (J-PAL), 'Teaching at the Right Level to Improve Learning', J-PAL Evidence to Policy Case Study, 2022.

Acheampong, Phinihas, and Juliana Fosua Gyasi, 'Teacher Retention: A Review of Policies for Motivating Rural Basic School Teachers in Ghana', *Asian Journal of Education and Training*, vol. 5, no. 1, 19 March 2019, pp. 86–92.

Adade, Ernest, 'The Teacher Trainee Allowance in Ghana: A historical analysis and policy reassessment', *The Ghana Report*, Accra, 2025, <https://theghanareport.com/the-teacher-trainee-allowance-in-ghana-a-historical-analysis-and-policy-reassessment/>, accessed 10 March 2026.

Adam, Issah, 'The Debate on Teacher Trainee Allowances: Government's Rationale and Trainees' Concerns', *Modern Ghana*, Accra, 24 August 2025, <https://www.modernghana.com/news/1426651/the-debate-on-teacher-trainee-allowances-governme.html>, accessed 10 March 2026.

Adedeji, Segun O. and Olanrewaju Olaniyan, *Fundamentals of teacher education development: Improving the conditions of teachers and teaching in rural schools across African countries*, UNESCO: International Institute for Capacity Building in Africa, Addis Ababa, 2011.

Afrane, Anthony O., 'Teacher Trainee Allowances Secure Future of Education in Ghana with GH¢203 Million Budget Allocation', *Modern Ghana*, Accra, 22 March 2025, <https://www.modernghana.com/news/1387911/teacher-trainee-allowances-secure-future-of-educat.html>, accessed 10 March 2026.

Africa Education Watch, 'Preliminary Statement on the 2024 Education Budget', *Africa Education Watch*, Accra, 17 November 2023.

Agbeh, Cecilia E. E., 'Policies for Teacher Recruitment and Retention in Ghana', *In Africa Union Pan African Conference on Teacher Education (PACTED)*, African Union Commission and Africa Federation of Teaching Regulatory Authorities, Addis Ababa, 2025, pp. 28–32.

Ahiabenu, Jospeh C. S., '21st-Century Skills, Curriculum Reform and the Political Will to Change', *Modern Ghana*, Accra, 24 October 2025, <https://www.modernghana.com/news/1443408/21st-century-skills-curriculum-reform-and-the.html>, accessed 10 March 2026.

Ajzenman, Nicolás, et al., 'Order Effects and Employment Decisions: Experimental Evidence from a Nationwide Program', IDB Working Paper No. 1266, Inter-American Development Bank, Washington, D.C., August 2021.

Ajzenman, Nicolás, et al., 'Altruism or Money? Reducing Teacher Sorting Using Behavioral Strategies in Peru', IDB Working Paper Series No. IDB-WP-01143, Inter-American Development Bank, Washington, D.C., August 2020.

Akseer, Spogmai and Ximena Játiva, 'Time to Teach: Teacher attendance and time on task in Ghana', UNICEF Office of Research – Innocenti, Florence, October 2021.

Ampofo, Akosua O. and Emmanuel Erastus Yamoah, 'Addressing Teacher Expectations: Challenges and Strategies for Educational HR Leadership in Ghana's Central Region', *Organization Development Journal*, vol 43, no. 1, 2025, pp. 48–56.

Annan, John K., Seung Hee Back and Hae Yong Lim, 'A Study on Teacher Evaluation System to Improve Professional Development Among Junior High School Teachers in Ghana', *Journal of Studies in Social Sciences*, vol. 22, no. 15, 2023.

Asare, Eric and Elizabeth Afriyie, 'Barriers to Basic School Teachers' Implementation of Formative Assessment in the Cape Coast Metropolis of Ghana,' *Open Education Studies*, vol 5, no. 1, January 2023.

Barbetta, Gian P., et al., 'Good or bad? Understanding the effects over time of multigrading on child achievement', *Economics of Education Review*, vol. 96, October 2023.

Barffour, Samuel K. and Isaac A. Ampofo Jr., 'Appraising Teachers' Performance in The Ghana Education Service: A Case of Birim Central Directorate of Ghana Education Service (G.E.S.)', *Education, Sustainability & Society*, vol. 4, no. 1, 2021, pp. 15–24.

Barrett, Peter et al., 'The Impact of School Infrastructure on Learning: A synthesis of the evidence', World Bank, Washington, D.C., 2019.

Bendini, Magdalena and Amanda E. Devercelli, eds., *Quality Early Learning: Nurturing Children's Potential*, World Bank, Washington, D.C., 2022.

Beg, Sabrin, et al., 'Strengthening Teacher Accountability to Reach All Students (STARS): Milestone 4: Impact analysis report', World Bank, Washington, D.C., 2020.

Beg, Sabrin, Ann Fitzpatrick and Adrienne M. Lucas, 'Gender Bias in Assessments of Teacher Performance in Ghana', Innovations for Poverty Action, 9 March 2021, <https://poverty-action.org/gender-bias-assessments-teacher-performance-ghana>, accessed 10 March 2026.

Bertoni, E., et al., 'Teachers' Preferences for Proximity and the Implications for Staffing Schools: Evidence from Peru', IDB Working Paper Series No. IDB-WP-01073, Inter-American Development Bank, Washington, D.C., October 2019.

Betthäuser, Bastian A., Anders M. Bach-Mortensen and Per Engzell, 'A systematic review and meta-analysis of the evidence on learning during the COVID-19 pandemic', *Nature Human Behavior*, vol. 7, 30 January 2023, pp. 375–385.

Bobi, Comfort, Courage J. W. Mawutor and Martin Ahiavi, 'Challenges of the Supported Teaching in Schools (STS) Programme: A Case of E.P College of Education Amedzofe', *Journal of Education and Practice*, vol. 7, no. 8, 30 December 2023, pp. 80–100.

Bour, Kwame B., et al., 'Reflections on Supported Teaching in School (STS) as a Strategy for Attaining Sustainable Teacher Education in Ghana', *SAGE Open*, vol. 15, no. 2, 21 April 2025.

Buabeng, Isaac, Forster D. Ntow and Charles D. Otami, 'Teacher Education in Ghana: Policies and Practices', *Journal of Curriculum and Teaching*, vol. 9, no. 1, 20 February 2020.

Caro, D. and Francis Ndem, 'Is Education Not Supposed to Help Reduce Inequalities: An analysis of equity and efficiency in teachers' allocation', Unpublished UNICEF Working Paper, New York, 2019.

Carvalho, Shelby and David K. Evans, 'Girls' Education and Women's Equality: How to get more out of the world's most promising investment', Center for Global Development, Washington, D.C., 12 May 2022, <https://www.cgdev.org/publication/girls-education-and-womens-equality-how-get-more-out-worlds-most-promising-investment>, accessed 10 March 2026.

Casely-Hayford, Leslie, et al., 'The Impact Assessment of the Untrained Teacher Diploma in Basic Education (UTDBE) in Ghana', Associates for Change, Accra, 15 September 2016.

Cattaneo, Maria A., Chantal Oggenfuss and Stefan C. Wolter, 'The More, the Better? The impact of instructional time on student performance', *Education Economics*, vol. 25, no. 5, 13 April 2017, pp. 433–445.

Cornish, Linley and Matshidiso Joyce Taole, eds, *Perspectives on Multigrade Teaching: Research and practice in South Africa and Australia*, Springer Nature, Switzerland, 2021.

Crouch, Luis, 'Meeting the Data Challenge in Education: A Knowledge and Innovation Exchange (KIX) Discussion Paper', Global Partnership for Education, Washington, D.C., July 2019.

Custer, Samantha et al., 'Toward Data-Driven Education Systems: Insights into using information to measure results and manage change', The Brookings Institute, 20 February 2018.

Dankwah, Emmanuel, A., Isaac Atuobi Nyarko, and Daniel, D. Mensah, 'Support Teaching in Schools: Perceptions of Teacher Trainees', *Social Education Research,* vol. 2, no. 2, 20 August 2021, pp. 289–297.

de Chaisemartin, Talia, 'Policy brief: How GPE Supports Teaching and Learning', Global Partnership for Education, Washington, D.C., September 2017.

Dee, Thomas S., 'Teachers and the Gender Gaps in Student Achievement', *The Journal of Human Resources,* vol. 42, no. 3, 2007, pp. 528–554.

Di Pietro, Giorgio. 'The impact of Covid-19 on student achievement: Evidence from a recent meta-analysis', *Educational Research Review*, 21 March 2023.

Dzikunu, Cosmos K., et al., 'Teachers' Perception towards Continuous Professional Development Policy in Ghana', *International Journal of Social Science Humanity and Management Research*, vol 4, no. 6, 6 June 2025, pp. 1015–1021.

Epstein, Andrew, et al., 'Teacher Rationalization, Retention, and Language Study: Final Report', United States Agency for International Development (USAID), 2019.

Evans, David K. and Amina Mendez Acosta, 'How to Recruit Teachers for Hard-to-staff Schools: A Systematic Review of Evidence from Low-and Middle-income Countries', *Economics of Education Review*, vol. 95, August 2023.

Evans, David K. and Alexis Le Nestour, 'Are Female Teachers Better for Girls' Education?', Center for Global Development, 23 May 2019, <https://www.cgdev.org/blog/are-female-teachers-better-girls-education>, accessed 10 March 2026.

Evans, David K., Fei Yuan and Deon Filmer, 'Teacher pay in Africa: Evidence from 15 countries', *World Development*, vol. 155, July 2022.

Fagernäs, Sonja and Panu Pelkonen. 'Preferences and skills of Indian public sector teachers', *IZA Journal of Labor & Development*, vol. 1, no. 3, 29 November 2012, pp. 1–31.

Freeman, Scott, et al., 'Active Learning Increases Student Performance in Science, Engineering, and Mathematics', *Proceedings of the National Academy of Sciences of the United States of America*, vol. 111, no. 23, 12 May 2014, pp. 8410–8415.

Gad, B. 'Recruitment and Retention of Public Sector Teachers in Ghana: A Discrete Choice Experiment', University of Ghana, 2015.

Ghana Education Service (GES), 'Press Briefing: Recruitment of First Batch of Degree Holders (2022) from Public Colleges of Education', GES, Accra, 2024.

Ghana, Ministry of Education (MoE), 'Education Sector Analysis Report. Ministry of Education', MoE of Ghana, Accra, Forthcoming.

Ghana, Ministry of Education (MoE), 'Education Strategic Plan 2018–2030', MoE of Ghana, Accra, 2018.

Ghana, Ministry of Education (MoE), 'Education Sector Analysis 2018', MoE of Ghana, Accra, 2019.

Ghana, Ministry of Education (MoE), 'Partnership Compact for Ghana. Improving Learning Outcomes: A Focus on Foundational Learning', Global Partnership for Education, Washington, D.C., 2024.

Ghana, Ministry of Education (MoE), UNICEF Ghana and UNICEF Office of Research and Foresight – Innocenti, 'Unpacking factors influencing early grade performance in Ghana', UNICEF Office of Research and Foresight – Innocenti, Florence, 2025.

Glewwe, Paul W., et al., 'School Resources and Educational Outcomes in Developing Countries: A review of the literature from 1990 to 2010', Working Paper 17554, National Bureau of Economic Research, Cambridge, October 2011.

Graham, Marien A., Surette van Staden and Prosper D. Dzamesi, 'Communicating Lesson Objectives and Effective Questioning in the Mathematics Classroom: The Ghanaian Junior High School Experience', *International Journal of Instruction*, vol. 14, no. 4, October 2021, pp. 965–984.

Hake, Richard R., 'Interactive-Engagement Versus Traditional Methods: A six-thousand-student survey of mechanics test data for introductory physics courses', *American Journal of Physics*, vol. 66, no. 1, January 1998, pp. 64–74.

Herman, Ryan S. and Amina Sulemana, 'Learning Locked Away? Promoting the use of teaching and learning materials in Ghana's classrooms', UNICEF Innocenti – Global Office of Research and Foresight, Florence, 24 September 2024, <https://www.unicef.org/innocenti/stories/learning-locked-away>, accessed 10 March 2026.

Kale-Dery, Severious, 'Teacher licensure exam phases out August 30 - New assessment system to replace it', *Graphics Online*, Accra, 17 July 2025, <https://www.graphic.com.gh/news/general-news/ghana-news-teacher-licensure-exam-phases-out-august-30-new-assessment-system-to-replace-it.html>, accessed 20 March 2026.

Kamere, Isabela M., M. I. Makatiani and Arthur Kalanza Nzau, 'Policy interventions for attraction and retention of female teachers in rural secondary schools: Perspectives of rural educators in Makueni County, Kenya', *Msingi Journal*, vol. 1, no. 2, 2019, pp. 50–59.

Koomson, Joshua B. and Elizabeth Konadu-Boakye, 'Allocate funds for National Teacher Policy - UNESCO tells govt', Graphic Online, Accra, 7 December 2021, <https://www.graphic.com.gh/news/general-news/ghana-news-allocate-funds-for-national-teacher-policy-unesco-tells-govt.html>, accessed 10 March 2026.

Lee, Jieun, Dong-Eun Rhee and Robert Rudolf, 'Teacher Gender, Student Gender, and Primary School Achievement: Evidence from ten francophone African countries', *The Journal of Development Studies*, vol. 55, no. 4, 3 April 2019, pp. 661–679.

Leuven, Edwin and Marte Rønning. 'Classroom Grade Composition and Pupil Achievement', *The Economic Journal*, vol. 126, no. 593, June 2016, pp. 1164–1192.

Lim, Jaegeum and Jonathan Meer, 'Persistent Effects of Teacher–Student Gender Matches', *The Journal of Human Resources*, vol. 55, no. 3, summer 2025, pp. 809–835.

Mason, De Wayne A. and Robert B. Burns, 'Simply no Worse and Simply no Better Maybe Simply Wrong: A Critique of Veenmans' School Consultation about Multigrade Classes', *Review of Educational Research*, vol. 66, no. 3, 1996, pp. 307–332.

Mulkeen, Aidan and Dandan Chen, 'Teachers for rural schools: Experiences in Lesotho, Malawi, Mozambique, Tanzania, and Uganda', World Bank, Washington, D.C., 24 April 2008.

Mulkeen, Aidan G. and Cathal Higgins, 'Multigrade Teaching in Sub-Saharan Africa: Lessons from Uganda, Senegal, and The Gambia', World Bank Working Paper No. 173, World Bank, Washington, D.C., 2009.

Namit, Kabira, 'Lessons from Ghana: A cost-effective way to train teachers', World Bank Group, 15 March 2017, <https://blogs.worldbank.org/en/education/lessons-ghana-cost-effective-way-train-teachers>, accessed 10 March 2026.

National Council for Curriculum and Assessment (NaCCA), '2022 P4 NST Report Findings', MoE of Ghana, Accra, 2022.

National Council for Curriculum and Assessment (NaCCA), 'English Language Common Core Programme (CCP)', MoE of Ghana, Accra, 2020.

National Development Planning Commission (NDPC), 'Vision 2057: Long-Term National Development Perspective Framework', NDPC, Accra, May 2024.

National Teaching Council (NTC), 'Induction Handbook for Newly Qualified Teachers', MoE of Ghana, Accra, 2021.

National Teaching Council (NTC), 'National Teachers' Standards for Ghana: Guidelines', MoE of Ghana, Accra, 2017.

Opoku-Asare, Nana A. A., et al., 'Pull and Push Factors Influencing Teachers in Rural Ghana and their Effect on Students Academic Performance', *London Journal of Research in Humanities and Social Sciences*, vol 22, no. 6, 2022.

Opuni, Stephen C., 'Who Gets to Teach? Rethinking Pathways to the Classroom', IDP Foundation, Inc., July 2025, <https://www.idpfoundation.org/learn_impact/who-gets-to-teach-rethinking-pathways-to-the-classroom/>, accessed 10 March 2026.

Osei-Asibey, Eunice, et al., 'Evaluation of Assessment Strategies Used by Basic School Teachers in Ghana: The Case of Assessment for Learning. Journal of Education', *Society and Behavioral Science*, vol 33, no. 4, 4 June 2020, pp. 58–66.

Parfitt, Anne, et al., 'Multigrade teaching and learning: Developing theoretical frameworks through mapping conceptual territories with an inclusive education lens', International Journal of Educational Research, vol. 133, 26 June 2025.

Pratt, David, 'On the Merits of Multiage Classrooms', *Research in Rural Education*, vol. 3, no. 3, 1986, pp. 111–116.

Safin, Dominika, 'Teachers for All: Madagascar: Improving equity in the allocation of teachers in Madagascar', UNICEF Innocenti – Global Office of Research and Foresight, Florence, November 2024, <www.unicef.org/innocenti/reports/teachers-for-all-madagascar>, accessed 10 March 2026.

Salifu, Majeed, 'Challenges in the Posting and Transfer of Teachers to Rural Community Schools in the Sissala East Municipality', Journal of Education and Practice, vol. 11, no. 36, 2020.

Salifu, Inusah, Boadi Agyekum and Doris Nketia, 'Teacher professional development (TPD) in Ghana: constraints and solutions', *Professional Development in Education*, 13 May 2024.

Sandefur, Justin, 'Schooling for All: Feasible strategies to achieve universal education', Center for Global Development, 21 Apirl 2022, <https://www.cgdev.org/publication/schooling-all-feasible-strategies-achieve-universal-education>, accessed 10 March 2026.

Saraogi, Namrata, Husein Abdul-Hamid and Sarah Mintz, 'Lessons Learned from World Bank Education Management Information System Operations: Portfolio Review, 1998–2024', World Bank, Washington, D.C., 2017.

STIR Education, 'Review of existing literature to understand various approaches to fostering teacher motivation', Forthcoming.

UNESCO Institute for Statistics, n.d. https://databrowser.uis.unesco.org/browser/EDUCATION/UIS-EducationOPRI, Accessed March 26, 2025.

UNICEF Ghana, 'Education Budget Brief 2024', UNICEF Ghana, Accra, 2024, <http://unicef.org/ghana/reports/unicef-ghana-budget-briefs-2024>, accessed 10 March 2026.

UNICEF Ghana, 'Ghana Education Budget Brief – 2025', UNICEF Ghana, Accra, 2025, <https://www.unicef.org/ghana/reports/unicef-ghana-budget-briefs-2025>, accessed 10 March 2026.

UNICEF Innocenti – Office of Strategy and Evidence and Global School Leaders, *Supporting Ghana's Women School Leaders*. UNICEF Innocenti, Florence, forthcoming.

UNICEF Innocenti – Office of Strategy and Evidence, Ghana Ministry of Education, and UNICEF Ghana, 'Data Must Speak – Schools inspiring change: Research on the practices and behaviours of positive deviant schools in Ghana', UNICEF Innocenti, Florence, September 2024, <https://www.unicef.org/innocenti/media/9646/file/UNICEF-Innocenti-DMS-Ghana-STG3-Report-2024.pdf.pdf>, accessed 10 March 2026.

UNICEF Innocenti – Office of Strategy and Evidence, Ghana Ministry of Education, and UNICEF Ghana, 'Data Must Speak – Teacher and head teacher characteristics and exam performance', UNICEF Innocenti, Florence, 2023a, <https://www.unicef.org/innocenti/media/3016/file/UNICEF-DMS-Ghana-Policy-Brief-2-2023.pdf>, accessed 10 March 2026.

UNICEF Innocenti – Office of Strategy and Evidence, Ghana Ministry of Education, and UNICEF Ghana, 'Data Must Speak: Unpacking Factors Influencing School Performance in Ghana', UNICEF Innocenti, Florence, 2023b, <https://www.unicef.org/innocenti/media/3001/file/UNICEF-DMS-Ghana-Unpacking-Factors-Influencing-School-Performance.pdf>, accessed 10 March 2026.

UNICEF Innocenti – Office of Strategy and Evidence, Ghana Ministry of Education, and UNICEF Ghana, 'Data Must Speak: Unpacking Factors Influencing Early Grade Performance in Ghana', UNICEF Innocenti, Florence, February 2025, <https://www.unicef.org/innocenti/media/10501/file/UNICEF-Innocenti-DMS-GHANA-Extention-Brief-Unpacking-2025.pdf>, accessed 10 March 2026.

Valenza, Marco and Thomas Dreesen, 'Five lessons for scaling targeted instruction from implementation research in Ghana: Key learnings for implementing targeted instruction drawn from the DL+ experience', UNICEF, 21 May 2025, <https://www.unicef.org/innocenti/stories/five-lessons-scaling-targeted-instruction-implementation-research-ghana>, accessed 10 March 2026.

Veenman, Simon, 'Cognitive and Non-Cognitive Effects of Multigrade and Multi-Age Classes: A Best Evidence Synthesis', *Review of Educational Research*, vol. 65, no. 4, 319–381, 1995.

Walberg, Herbert J. and Shiow-Ling Tsai, '"Matthew" Effects in Education', *American Educational Research Journal*, vol. 20, no. 3, 1983.

Wisenöcker, Anrdea S. et al., 'A meta-analysis of students' academic learning losses over the course of the COVID-19 pandemic', *Learning and Instruction*, vol. 98, August 2025.

World Bank, 'Learning Recovery to Acceleration: A global update on country efforts to improve learning and reduce inequalities', Washington, D.C., 19 July 2023, <https://www.worldbank.org/en/topic/education/publication/the-rapid-framework-and-a-guide-for-learning-recovery-and-acceleration>, accessed 10 March 2026.

World Bank, 'Ghana Accountability for Learning Outcomes Project (P165557)', World Bank, Washington, D.C., 2019, <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/415871570586470453>, accessed 10 March 2026.

Zubairi, Asma T., 'A District Level Study on the Deployment, Allocation and Utilisation of Teachers Between and Within Malawi's Primary Schools: An accountability and political settlement approach', PhD thesis, University of Cambridge, 2021.

Acknowledgements

The Teachers for All (T4A) research in Ghana is a collaborative effort made possible by the commitment of the Ministry of Education Ghana, United Nations Children's Fund (UNICEF) Ghana, UNICEF Innocenti – Office of Strategy and Evidence (UNICEF Innocenti) and key partners from the Ghana education sector. The development of this report was led by Ryan Shawn Herman (UNICEF Innocenti).

The T4A research would not be possible without the leadership, dedication and overall support of the Ministry of Education Ghana: Mavis Asare, Director of the Planning, Budgeting, and Monitoring & Evaluation unit; Aminu Sulemana, Emmanuel Asare and Mirabel Kyei Bentil from the Planning, Budgeting, and Monitoring & Evaluation unit; Nick Barnor, Faris Sulemana, Edward Dogbey and Theophilus Acquah from the Statistics, Research, Information and Monitoring unit; and all members of the T4A Working Group, including the Ghana Education Service (GES), the National Council for Curriculum and Assessment (NaCCA), the National Teaching Council and many other education stakeholders at the central and decentralized levels.

The T4A research greatly benefited from the coordination and commitment of the UNICEF Ghana Country Office Education Team, especially Christin L. McConnell, Tillmann L. Guenther, Bright Teiko Foli and Agnes Arthur, as well as other development partners that have participated in co-creating this research from the outset. The team is particularly grateful to the individuals who generously agreed to be interviewed, sometimes more than once, for this report. Their thoughtful insights, candid perspectives and valuable contributions provided the team with a host of rich insights for this report. These individuals are: Angela Frimpomaa Nkansah (GES), Charity Demebu (Okaikwei North Municipal Education Office), Cynthia Amoah Tackie (GES), Desmond Allotey-Pappse (National Teaching Council), Ebenezer Abbey (New Road Education Circuit), Ebenzer Perry Ofori (Ablekuma North Municipal Education Office), Priscilla Ashiagbor (Madina Seventh Adventist Basic School) and Togoh Agbemabiese (Awutu Senya East Municipal Education Office).

This report also benefited from the insightful comments and inputs of Kathryn Dempsey Bullard (World Bank Group), Mabruk Kabir (Innovations for Poverty Action), Stephen Caleb Opuni (IDP Foundation) and Nirav Nitin Shah (UNICEF Ghana).

Special thanks also go to Sonakshi Sharma, who oversaw the implementation of the research; additional members of the T4A research team at UNICEF Innocenti for their contributions to the T4A research; administrative and communications colleagues who made the production of this report possible; and Carolina Alban Conto, Linda Jones and Mathieu Brossard (former UNICEF Innocenti) for their overall guidance of the T4A research and the education unit at UNICEF Innocenti.

The T4A research in Ghana is made possible by the generous support of the Foreign, Commonwealth and Development Office (FCDO).

Layout design: Afternorth
Copy editing: Strategic Agenda

Photography:
Cover: © UNICEF/UNI669229/Noorani
Page 7: © UNICEF/UNI667263/Noorani
Page 11: © UNICEF/UNI667223/Noorani
Page 15: © UNICEF/UNI669232/Noorani
Page 18: © UNICEF/UNI666578/Noorani
Page 20: © UNICEF/UNI673426/Noorani
Page 32: © UNICEF/UNI680012/Noorani
Page 44: © UNICEF/UNI674904/Noorani
Page 47: © UNICEF/UNI667255/Noorani
Page 96: © UNICEF/UNI679967/Noorani

About us

UNICEF, the United Nations agency for children, works to protect the rights of every child, everywhere, especially the most disadvantaged children and in the toughest places to reach. Across more than 190 countries and territories, we do whatever it takes to help children survive, thrive, and fulfil their potential.

UNICEF Office of Strategy and Evidence – Innocenti accelerates progress for children by working to ensure that policies and programming are informed by high-quality evidence. As the global custodian of child-related official statistics, it works closely with governments and partners to strengthen national statistical systems. Through world-leading data, research and foresight, it underpins UNICEF's global leadership on children's rights and serves as the organization's hub for setting strategy and monitoring programmes. With the active engagement of young people and other partners, it supports advocacy and dialogue aimed at improving the lives of children everywhere.

Published by
UNICEF Office of Strategy and Evidence – Innocenti
Via degli Alfani, 58
50121, Florence, Italy

Email: innocenti@unicef.org
Web: unicef.org/innocenti | data.unicef.org
Social media: @UNICEFInnocenti on Bluesky, Instagram, LinkedIn, and YouTube

In partnership with
Ministry of Education Ghana

Suggested citation
Herman, Ryan Shawn, *Teachers for All: Strengthening equitable teacher deployment to improve learning in Ghana*, Office of Strategy and Evidence of UNICEF-Innocenti, Florence (Italy), May 2026.

© United Nations Children's Fund (UNICEF), May 2026. Except for the UNICEF logo, photos and where another © appears, this work is licensed under CC BY 4.0. The UNICEF logo and enclosed photos may only be used in exact copies of the publication. Where another © appears, you must ask the listed copyright holder to use the item outside exact copies of the publication.

for every child, **answers**

unicef

for every child