

**the
Education
Commission**



FAB INC.

Education Workforce Initiative: Country Report

Innovative Education Workforce
Analysis for More Equitable Education

Sierra Leone

The Need

Sierra Leone faces a substantial number of challenges to ensure that all children can be taught by a qualified and effective education workforce. Learning outcomes are low, almost one-third of the education workforce is unqualified and more than half are not on the government payroll. These challenges are most acute in remote areas. Ensuring opportunities are equitably and efficiently distributed across Sierra Leone is a key policy issue.

In 2018, the new President introduced the Free Quality School Education policy to increase access to education and improve learning. This has been supported by an increase in spending on education to reduce existing inequities in education workforce deployment and pupil learning. This was successful in encouraging children back to school and bringing more teachers onto payroll – but given the scale of the issues, significant work remains.

Alongside these reforms, the Teaching Service Commission (TSC) has continued its work to professionalize teachers and improve the teacher management ecosystem. However, limited resources and time and widespread fragmentation of the system mean there is still more to do.



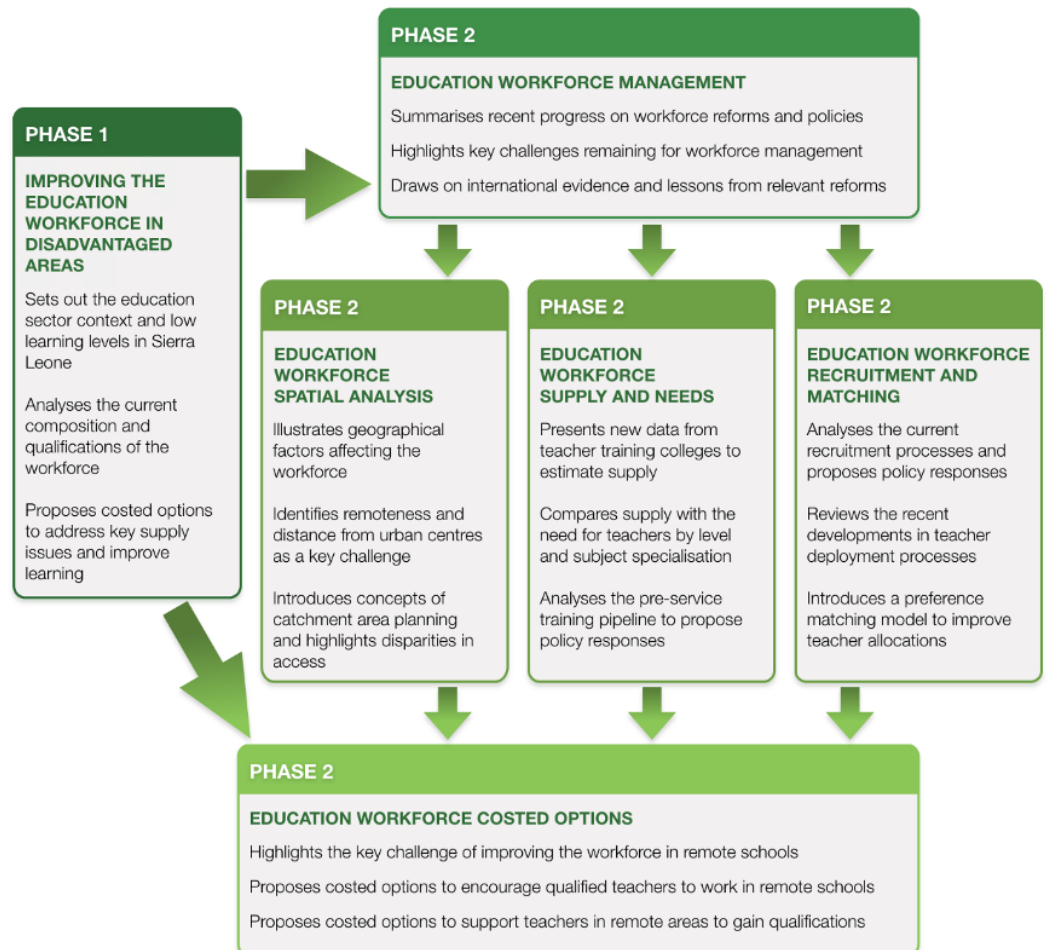
Project Overview

Between February 2019 and September 2020, the Education Commission’s Education Workforce Initiative (EWI), funded by UK Aid, partnered with Fab Inc. and Sierra Leone’s Teaching Service Commission (TSC) to support their education workforce reform efforts. **The aim of the project was to work with TSC to research, analyze, and propose solutions for improving the supply and demand of teachers in the most disadvantaged areas.**

In phase 1, the project analyzed country data and drew on research from the [Transforming the Education Workforce](#) report to propose options to support under-achieving primary schools in disadvantaged districts to get the teachers and education workforce personnel required to improve learning outcomes.

In phase 2, the research and analysis broadened to apply a systemic lens across the workforce lifecycle, considering how to improve the supply and demand of teachers across Sierra Leone. These analyses have provided nuanced evidence for many issues that were only previously conjectured or lost in discussions of averages. The project worked adaptively and collaboratively with stakeholders across government, teacher unions, and development partners to produce a series of evidence products aimed at supporting both government policymaking and development partner activities. These six evidence products covered key aspects of the education workforce: education workforce in disadvantaged areas; management; spatial analysis; supply and needs; recruitment and matching; and costed options.

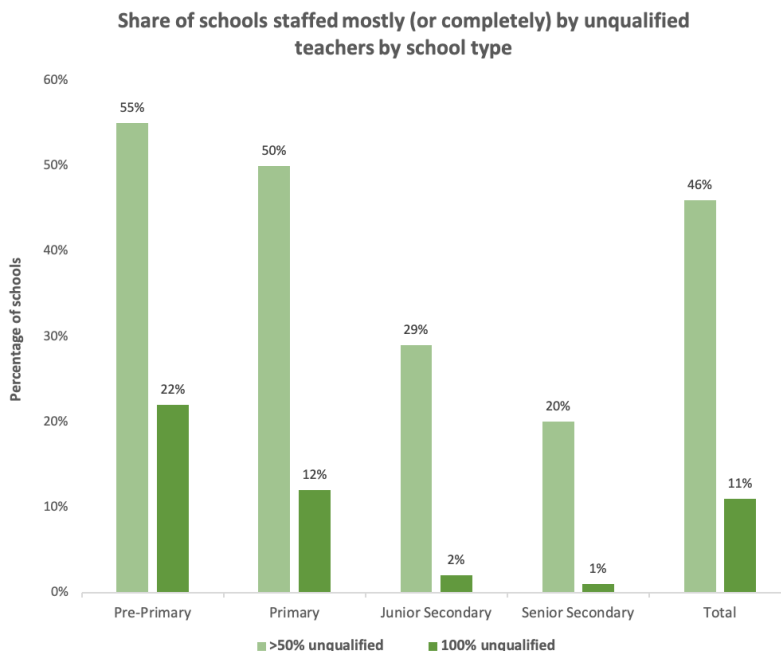
Figure 1: Overview of project research and analysis



Project Description

Improving the education workforce in disadvantaged areas

Figure 2: Analysis of unqualified teachers by school level



The project used a data-driven approach to identify the greatest challenges within the education workforce.

This first analysis highlighted the extent of unqualified and/or untrained teachers and the high prevalence of schools that are staffed mostly, or even completely, by unqualified teachers (see Figure 2). Options based on evidence of impactful interventions were identified to address the issue of unqualified/untrained teachers. These included for example, drawing on the experience of Street Child and Girls Access To Education (GATE) programs in Sierra Leone to support unqualified teachers to gain qualifications; in the

meantime, supporting unqualified and/or untrained teachers with additional training to improve their teaching of foundational skills with evidence-based strategies such as Teaching at the Right Level (TARL); and bringing expert teaching into the classroom remotely drawing on the MGCubed program TV lessons in Ghana.

As a result, costed options were proposed for addressing key supply issues and boosting learning outcomes in disadvantaged, remote schools:

- redistribution of qualified teachers within schools and chiefdoms to areas of greatest need;
- a 50:50 subsidy/loan to support high-potential unqualified teachers to qualify;
- radio lessons to get expert teaching into rural classrooms;
- intensive remedial study camps focused on foundational learning.

Education workforce management

The project then took a systems approach. It collated all the policies produced by the TSC and mapped partner support efforts to provide an overview of the key systemic challenges across the workforce lifecycle. The first challenge identified was around workforce management.

Existing efforts aim to rebuild and strengthen a career-based management system for the education workforce, which seeks to recruit, retain and progress workers throughout their careers. Therefore, this paper drew on international evidence to propose ways of ensuring desired workforce characteristics, improving supply chain quality, utilizing data systems and successfully managing devolution. This work highlights a vital ingredient for successful workforce management in education: effective collaboration within and across institutions.

Education workforce spatial analysis

While it is often asserted that substantial differences in education workforce characteristics and ratios exist across Sierra Leone, it is important to unpack this to inform policy. This evidence product used spatial analysis to show that differences within districts are greater than the differences across districts. The project found that it is schools beyond walking distance (5km) from district population centers where the workforce challenges are greatest. For example, the pupil-qualified teacher ratio increases from 44:1 for primary schools within a one hour walk (5km) of an urban center to more than 76:1 for those farther away.

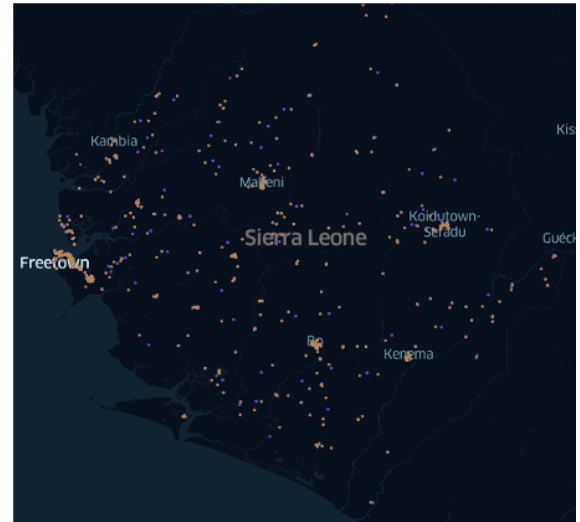
These remote schools struggle to attract teachers and rely on locally hired, unqualified teachers. The share of female teachers falls by half in these areas, leading to Sierra Leone having the sixth lowest share of female teachers in the world. Access to subject specialists in the core subjects is also far worse in more remote areas where nationally at junior secondary school and senior secondary school levels, 40% of English language classes, 54% of math classes and 42% of science classes are taught by teachers that are not specialized in those subjects. The spatial analysis showed that up to a third of schools lacking a subject specialist (see Figure 3, blue pinpoint) could be jointly served by specialists at nearby schools (orange pinpoint) that have space in their time-table.

While the population is relatively well served with basic primary schools, substantial gaps in access exist at junior secondary school and senior secondary school levels, with one-quarter of the population living beyond walking distance from a junior secondary school. Catchment area planning taking account of spatial analysis is vital for improving the equity of access at secondary level going forward.

Education workforce supply and needs

The supply and needs analysis incorporated new data on teacher supply (such as subject specialisms and gender) drawn from a survey of the teacher training colleges and examination boards. This data was compared to a model of teacher needs built from school level EMIS data to add nuance to the discussion on current and future shortages. At secondary level, this allows estimates of the teacher need to go beyond simplistic teacher-pupil ratios, to take into account timetables and specific subject needs.

Figure 3: GIS analysis of subject specialists

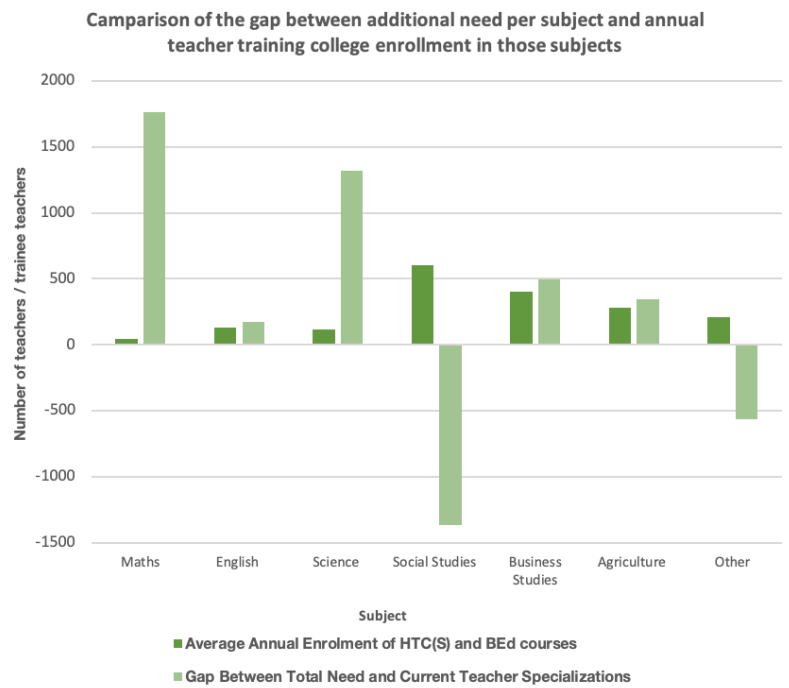


The project analyzed the full pipeline from current secondary school leavers through the pre-service training process. Findings showed that without intervention, the overall supply of teachers will not meet the needs of a fully qualified education workforce within the targeted timeframe, and the current supply of math and science specialised teachers will never be enough to meet the needs at secondary level.

Drawing on international evidence, options were put forward for increasing the supply of required teachers, including increasing collaboration with teacher training colleges and exam boards to utilize their influence over students' subject specialization choices and providing subsidies and loans for specific subject specialists or high-potential unqualified teachers.



Figure 4: Gaps in subject specialisms



Education workforce recruitment and matching

This set of analyses reviewed official recruitment processes and how they work in practice, to understand the potential options to resolve discrepancies. In particular, the analyses differentiated between types of unrecognized teachers already in schools. For example, suggested actions for unqualified teachers differ depending on whether there is a sufficient pool of qualified teachers in that area. In more remote areas with greater shortages of qualified teachers, there is a need to provide greater support to unqualified teachers to help improve their skills and become qualified teachers. Where there are sufficient qualified teachers, the support should be provided to these, to ensure they are effective.

The analyses also looked at recent centralized deployment efforts and identified potential areas where these processes could be improved. For example, this included taking account of distance and travel time from urban centers into remoteness categories and incorporating these aspects into EMIS and attendance monitoring systems.

Given the particular challenges explored in the other evidence products, such as the difficulty of staffing remote schools, and the lack of core subject specialists, this paper identified a potential cross-cutting solution based on a Nobel-prize winning algorithm used in the health sector to deploy doctors. As a result, the project team developed a Preference Matching Model that can assign teachers algorithmically based on their characteristics and preferences, such as gender, location, experience, level of qualifications, subject specialism, school facilities, teacher accommodation and utilities.

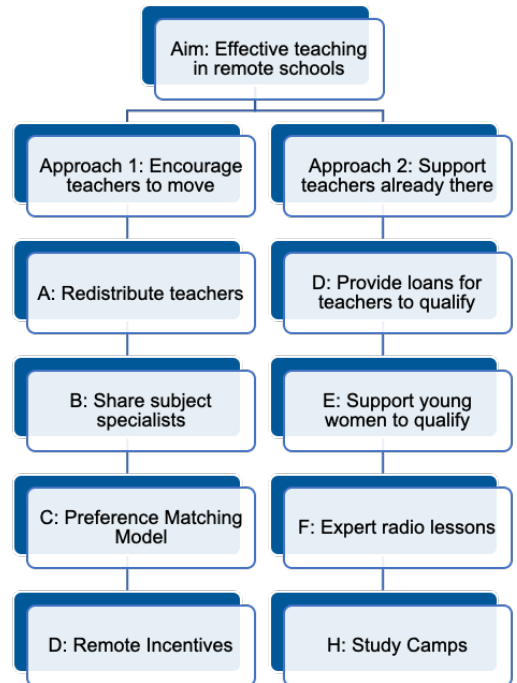
Education workforce costed options

The final evidence product focused on increasing the number of qualified, specialized and effective teachers in poorer, remote schools. This paper differentiated between the two main approaches of encouraging qualified teachers to move to those areas and supporting the teachers already there (see Figure 5).

This paper discusses in more detail the programming decisions, benefits, risks, options for piloting, and most importantly, detailed estimates of the costs for each option.

The key constraints affecting these options are the low shares of teachers on payroll and the quality of pre-service training. This paper also identifies also identify where these options can offer cost and efficiency savings while payroll is constrained.

Figure 5: Approaches to getting qualified teachers in remote schools



Expected Results

- The work culminated in a policy dialogue attended by the Minister of Basic and Senior Secondary Education and Ministers and other representatives from across government, as well as key education stakeholders including teachers. This resulted in actions to address the supply of Maths and Science specialist teachers and the number of qualified and specialized teachers in remote areas.
- The analysis on deployment will inform updates to the Teacher Deployment Policy; in addition, the work of identifying spatial challenges has led to demand for school catchment mapping to inform a new program of construction.
- Project analyses led to the development of a simple vulnerability index to support government and development partners' responses to the COVID-19 crisis, ensuring that vulnerable, remote schools and communities were targeted.
- Policy options for improving equitable access to good teaching, including costs, benefits and future cost-savings, were developed and shared for potential piloting and scaled-up adoption by government and development partners.
- Project support to technical staff at TSC and the Ministry has helped to improve ongoing data collection activities and analysis of the supply and deployment of the education workforce.

Lessons Learned

- **Extensive stakeholder engagement** - Continuous communication with stakeholders was crucial to this project. The breadth of policies and activities being implemented by TSC, the Ministry of Basic and Senior Secondary Education and development partners that relate to the education workforce are extensive and not always aligned. Breaking down these 'silos' and encouraging broader collaboration and knowledge-sharing was an essential step in avoiding duplication and identifying where value could be added.
- **Accessible presentation of technical analyses** - The importance of engagement also extended to ensuring the outputs of the highly technical analyses were presented in accessible and actionable formats. The stretched capacity of government and development partners, particularly during the COVID-19 crisis, further highlighted that while the background analyses may be complex, there is a need for key findings and proposals to be communicated as clearly and visually as possible in order to influence policy decisions and so a flip book was produced.
- **Project flexibility** - Flexibility was paramount to meeting the needs of the TSC and Ministry of Basic and Senior Secondary Education. This included initial pivots from research and activities where other actors were already engaged towards areas of greatest need to the government. It also included adaptation of support to the COVID-19 crisis. This flexibility enabled the project to provide timely support to government and development partners during unprecedented and rapidly evolving circumstances.

Moving Forward

The TSC, Ministry of Basic and Senior Secondary Education and UK Aid have asked EWI to continue to support education workforce reform in Sierra Leone. In the next phase of this work, UK Aid is funding EWI to work with Ark EPG to support Sierra Leone's Emergency Education Taskforce which is coordinating the Ministry's COVID-19 response. EWI will also work with the TSC to ensure the analyses to date informs policies and policy guidance concerning the education workforce.

All techniques and tools developed during this work have been made available to the government and others as digital public goods.



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