

RESEARCH & POLICY PAPER

Education Workforce Management in Sierra Leone

Alasdair Mackintosh, Ana Ramirez, Paul Atherton,
Victoria Collis, Miriam Mason-Sesay, and Claudius Bart-Williams

August 2020

Education Workforce Management in Sierra Leone

Executive Summary

This paper is the first in a series developed by Fab Inc. (on behalf of the Education Commission), to help the Teaching Service Commission (TSC) strengthen further the education workforce. It is part of the wider [Education Workforce Initiative](#) (EWI) and builds on the [Transforming the Education Workforce](#) report. Sierra Leone has been a key partner in this initiative. This work builds on a phase one scoping study that focused on options to strengthen the workforce. The other papers in this series cover: Education Workforce Spatial Analysis, Education Workforce Supply and Needs, Education Workforce Recruitment and Matching and Education Workforce Costed Options.

Sierra Leone faces a multitude of challenges, many of which are a product of successfully expanding access to schooling across the country; combined with recovery from conflict, natural disasters, and Ebola. By far the greatest challenge is how to ensure that there is a high-quality education workforce for all schools in the country, a particular challenge for the many remote rural communities.

Underpinning this is a conceptual question about what a good education workforce system looks like, and how it can be structured to solve this problem. Two main approaches dominate public sector workforce management: position and career-based systems. These are helpful to understand and contextualise Sierra Leone's approach.

In position-based systems, *the onus is on individuals to apply for jobs and manage their career progression*. The alternative is career-based workforce management, which is the most common approach in the developing world, but only used in a small number of OECD countries – mainly France and Italy. These systems tend to recruit at entry level with the intention of retaining workers throughout their careers. They tend to regulate entry - some countries accept graduates solely (or mainly) from selected higher education institutions, while in others entry is controlled via a centrally administered examination.

Historically, Sierra Leone's education workforce was managed using a career-based structure, like most other countries in West Africa. TSC's work to date suggests the institution's strategy is to rebuild and strengthen this, correcting disconnects which have emerged due to compromises on entry-qualifications and community teachers necessitated by successive emergencies including conflict and Ebola, and fiscal constraints.

TSC must now foster the administrative, technical, and collaborative skills needed to run a high performing career-based education workforce management system, centrally and at district level. The range of policies and tools already developed or in progress are an important and necessary part of achieving this but are not sufficient in themselves. In

identifying the key challenges remaining, this paper draws on evidence from a wide range of other education systems.

Workforce engineering can help to ensure the workforce has the desired characteristics going forwards. Karnataka in India lacks female education workers as well as teachers from certain castes, tribes and other minority groups. This causes supply restrictions in some districts as well as a shortage of relatable role models for many students, and an impact on girls' enrolment. The state has used its hiring and deployment processes as a way of engineering workforce diversity over time.

Data is a crucial part of education workforce management. However, it is important to ensure buy-in to the data management systems and provide training on their use at all workforce levels. Evidence from Lebanon highlights the risks involved when expensive data systems are developed without these and represents a cautionary example for TSC. The human resource management system currently under development for TSC has the potential to be a transformative tool for the management of the education sector workforce. However, extracting value from the new HRM system will require significant investment in developing officials' capacity to make use of it, as well as ensuring appropriate and secure levels of access to data.

In Sierra Leone there is an ongoing trend towards decentralisation. Examples from African countries suggest that devolution of responsibility can take place successfully at all points in the system, from the school level up. They also suggest it is worth considering managed delegation from across a wide selection of areas connected to education workforce management, from recruitment to deployment and transfers, and from monitoring absence to providing well targeted CPD. For TSC, one of the benefits of its investment in high quality policies and tools for managing the workforce should be that it can introduce elements of devolved decision making with confidence.

In every case above, the evidence presented highlights one additional vital ingredient for successful workforce management in education: effective collaboration. In Sierra Leone, this highlights the importance of TSC working closely with other education actors and stakeholders including the Ministry of Basic and Senior Secondary Education (MBSSE), Ministry of Technical and Higher Education (MTHE), Directorate of Science, Technology and Innovation (DSTI), Ministry of Finance as well as the Teacher Training Colleges (TTCs), Tertiary Education Commission (TEC), West African Examination Council (WAEC) and National Council for Technical, Vocational and other academic Awards (NCTVA).

One of the most important, and lacking, aspects here is between TSC and the TTCs to ensure that studying for a teaching qualification equips individuals to work effectively in the classroom, and that TTCs use TSC policies, and the Professional Standards, to help shape their curricula and approach. As such a key part of the pipeline into a career-based management system, TSC must ensure that the teacher training process outputs the desired teacher quality.

Education Workforce Initiative Overview

This paper is the first in a series developed by Fab Inc. (on behalf of the Education Commission), to help the Teaching Service Commission further strengthen the education workforce. It is part of the wider [Education Workforce Initiative](#) (EWI) and builds on the [Transforming the Education Workforce](#) report. Sierra Leone has been a key partner in this initiative. This work builds on a phase one scoping study that focused on options to strengthen the workforce.

The second phase provides succinct evidence products on specific research areas to guide a policy dialogue on aspects of the education workforce in Sierra Leone, to be held in Freetown. Figure 1 summarises the relationship of these papers to each other:

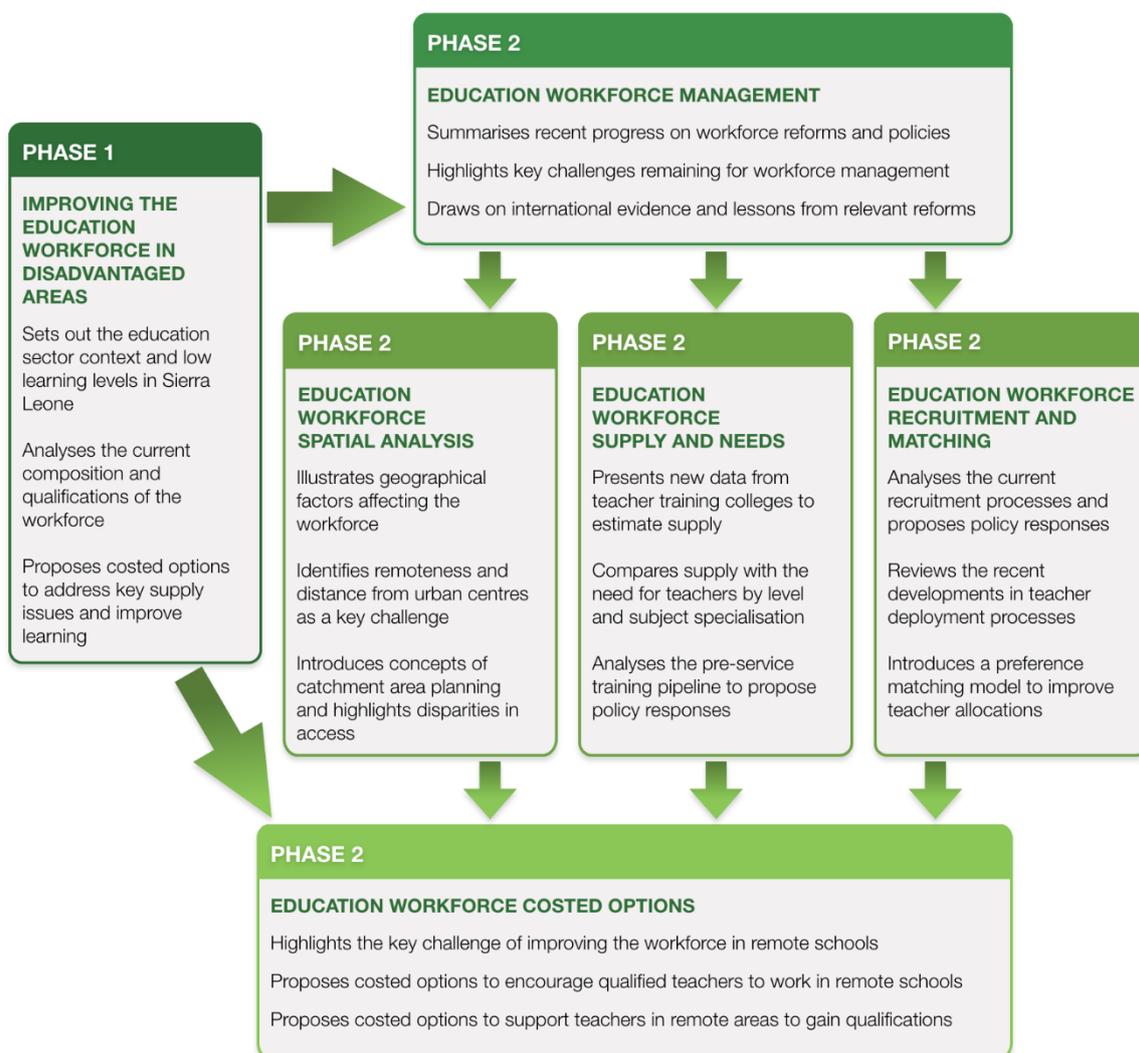


Figure 1: Education Workforce Initiative - Sierra Leone papers

Education Workforce Management Overview

Sierra Leone faces a multitude of challenges in education, many of which result from successfully expanding access to schooling across the country against a backdrop of recovery from conflict, natural disasters, and Ebola. Among the greatest of these is how to ensure a high-quality education workforce in all schools in the country, especially in remote rural communities.

The series of four papers looks in some detail at the most important aspects of this central question. This Education Workforce Management paper identifies these, explores them as management issues using examples taken from other systems worldwide, and signposts on to the more technical papers on Spatial Analysis, Supply and Needs, and Recruitment and Matching. The structure of this paper is as follows:

Section 1 Overview: This paper opens with a section on how countries worldwide choose to organise their education workforces, from a management and administration perspective. It explores the strengths and weaknesses of the two main alternative approaches to this. Finally, this section focuses in to set the Sierra Leone system, especially the recent reform work undertaken by the Teaching Service Commission, into this global context.

The subsequent sections of the paper focus in turn on important aspects of developing a good education workforce management system, as follows:

Section 2 Workforce Engineering: This section uses international evidence and examples to explore the question *How do we balance the needs of the system with the needs and preferences of workers to ensure we have the right number of people in the right place, in the most cost effective way possible?* It considers issues of matching, deployment and transfers, and links to the companion Recruitment and Matching, Supply and Needs and Spatial Analysis papers.

Section 3 Worker Supply Chain Quality: This section uses international evidence and examples to explore the question *How do we ensure a consistent and high-quality pipeline of new workers into the system?* It considers issues of pre-service training, and how countries have tackled the complexities of regularising anomalies that have arisen as the result of extraordinary circumstances. It links to the companion Supply and Needs and Recruitment and Matching papers.

Section 4 Data for Decision Making: This section uses international evidence and examples to throw light on the question *How can data and data systems help administrators improve planning, budgeting, and human resource management?* It includes a cautionary tale, as well as an example of collaborative innovation. Smart use of data to strengthen the evidence base for decision making underpins the content of both the companion Recruitment and Matching and Spatial Analysis papers.

Section 5 Locus of Decision Making: This section uses international evidence and examples to throw light on the question *How can devolving responsibility for certain tasks down to district or school level help administrators strengthen the quality of education*

workforce management, without losing control of crucial decisions? It includes a very structured approach in one setting, as well as examples from the region. While this question is not included in depth in other papers, it does connect to issues of collaboration, for example with TTCs, which is important to the Supply and Needs paper, and is explored at several points in this management paper.

1. Overview of the Education Workforce Management System

1.1 The Teaching Service Commission: mandate and progress

Following the 2018 election, Sierra Leone identified education as one of eight strategic national priorities under the leadership of President Bio. Among other actions, the government has introduced the Free Quality School Education policy in the last two years and activated the Teaching Service Commission Act of 2011. The Teaching Service Commission's mandate includes all matters pertaining to teachers in the government and government assisted sub-sector, elaborated as covering:

- Broad advice to the Minister on the topic of education workers, including issues such as pre-service training, delivered by Teacher Training Colleges, the approach to managing unqualified and untrained teachers; and ways of sanctioning breaches of standards of professional practice;
- Registration and licensing, and the maintenance and publication of a register of education workers;
- Recruitment, deployment, transfers, and dismissal of education workers, including verifying qualifications and disciplinary procedures;
- Induction of new workers and continuing professional development for the cadre;
- Development and maintenance of standards and codes of professional ethics;
- Defining rights and obligations of education workers to the institutions where they work, and vice versa;
- Appraising the performance of head teachers and principals;
- Advocacy for the improvement of conditions of service.¹

The TSC has already made impressive progress in the development of a range of cardinal policies and management tools to enable it to deliver on this mandate.

Key documents include the 2017 Professional Standards for Teachers and School Leaders, as well as the more recent policies on Teacher Management and Teacher Registration and Licensing in 2019. Meanwhile, the TSC is currently working, with support from technical assistance financed by the European Union, on a range of tools including a human resource management database integrated with the payroll system, a CPD framework, and a manual for implementing the teacher management policy at central and district levels. In addition, the organisation has put in place a network of TSC officials at district level,

¹ Adapted from Teaching Service Commission Act, pages 7-8; Government of Sierra Leone, 2011

charged with working with schools on the one hand and the District Education Offices on the other.

Once complete, this body of work should create a solid theoretical framework for education workforce management in Sierra Leone within the scope and mandate of the TSC (see Figure 2 below). After an opening section which looks at the two ways most education workforces are managed and fits Sierra Leone into that global framework, this paper identifies ways in which this strong starting point could be strengthened. These are organised into four sections, each of which focuses on a common issue experienced by those managing big workforces in the public sector.

1.2 Global approaches to education workforce management

Two main approaches dominate public sector workforce management worldwide, including in education; position and career-based systems.² These are helpful to understand and contextualise Sierra Leone's approach.

Position-based systems invite applications for specific roles, such as Head of Mathematics for a school, from outside and inside the existing pool of workers, subject to relevant statutory qualifications. Australia, Iceland, and the Netherlands offer the purest examples.

Position-based systems are characterised by decentralised management, with decisions on hiring usually made at school level, and approaches to promotion linked to the individual and their performance, within broad pay scales. Underpinning this is the philosophy that you can create a market and then tweak it to attract desired skills and categories of workers and empower schools to make decisions. Position-based systems often make use of localised, or system wide, financial, and other incentives to attract teachers to work in difficult operating environments, or into subjects where there is a shortage of qualified instructors.

In position-based systems, *the onus is on individuals to apply for jobs and manage their career progression*. The role of the state is in regulation and licensing, plus monitoring and inspection, to maintain and improve on the quality of teaching over time.

The alternative is **career-based** workforce management, which the most common approach in the developing world, but only used in a small number of OECD countries; notably France and Italy. These systems generally recruit at entry level with the intention of retaining workers throughout their careers. They also tend to regulate entry; some countries accept graduates solely (or mainly) from selected higher education institutions, while in others entry is controlled via a centrally administered examination.

² Van Acker, W. Civil Service Recruitment: Recruiting the right persons the right way, World Bank Group November 2019

Career-based systems have centralised approaches to deployment, management, and remuneration of teaching and other staff. Promotion is usually tied to duration of service. Often, there is a weak, or no, direct link between individual performance and gains in pay and grade, and it can be difficult to progress faster than the standard pace of promotion. Workers are deployed and transferred based on the needs of the whole system. This process can be managed at national or sub national (for example district) level. The management and decision-making role of the state is much more central to the success of career-based systems.

Table 1 summarises the main advantages and disadvantages of both approaches. While they are presented as either/or choices, many systems introduce features from the other approach. For example, many career-based systems use incentives to nudge applicants towards hard to fill posts.

Table 1: Broad advantages and disadvantages of career- and position-based systems			
Position Based		Career Based	
<i>Advantage</i>	<i>Disadvantage</i>	<i>Advantage</i>	<i>Disadvantage</i>
Flexible workforce, no residual liability to the state once a worker leaves a post	Can result in uneven quality of teaching provision	Recruitment for the long term can help avoid shortages or over supply	Requires strong, technocratic central planning and budgeting
School based recruitment avoids matching issues, plus wage flexibility to attract applications in hardship posts	Good teachers can be lost when leaving a post	Enables clear standards in recruitment, deployment and training	Creates matching issues between workers and needs of the system
Recruitment on a needs basis rather than annual round	No economies of scale in purchasing CPD locally	Allows state to forecast costs and liability for workforce in detail	Requires strong school to government links, excellent data, or both
Self-regulating labour market, can be nudged	Requires excellent management capacity in schools	Clear career progression and job security for teachers	Lacks flexibility in the event of shocks to the system (e.g. refugees)
Individuals can progress fast, poor performers removed		CPD offer can be standardised and procured centrally	Difficult to remove poor performers or reward excellent ones

1.3 Education workforce management in Sierra Leone

Historically, Sierra Leone's education workforce was managed using a career-based structure, like most other countries in West Africa. The Teaching Service Commission's work to date indicates the institution's strategy is to rebuild and strengthen this, correcting disconnects which have emerged due to compromises on entry-qualifications and community teachers necessitated by successive emergencies including conflict and Ebola, as well as fiscal constraints. This work is summarised above in section 1.1.

Figure 2 brings together the content of policy documents produced by the TSC since 2017 with the aim of creating a stronger and more coherent approach to education workforce management. Presented as a lifecycle of an education worker, it is important to note this is an illustration of the way in which recruitment, deployment, transfers, promotion, and retirement *should* work, based on the TSC's range of available policy documents. The reality of implementing these policies is not likely to be straightforward.

The rest of this paper offers perspectives on common problems that face career-based education workforce systems. The first two, on workforce engineering (links to Recruitment and Matching, and Spatial Analysis papers) and worker supply chain quality (links to Supply and Need paper) look at approaches to the mechanics of managing a large cadre of public sector workers. The third considers the production, sharing and use of data to guide planning, budgeting and decision making. Both the Recruitment and Matching and Spatial Analysis papers offer real and applicable examples of how data can be used to strengthen workforce management. The fourth focuses on aspects of sharing responsibility for managing the workforce, through carefully calibrated decentralisation and meaningful collaboration with other actors in the sector.

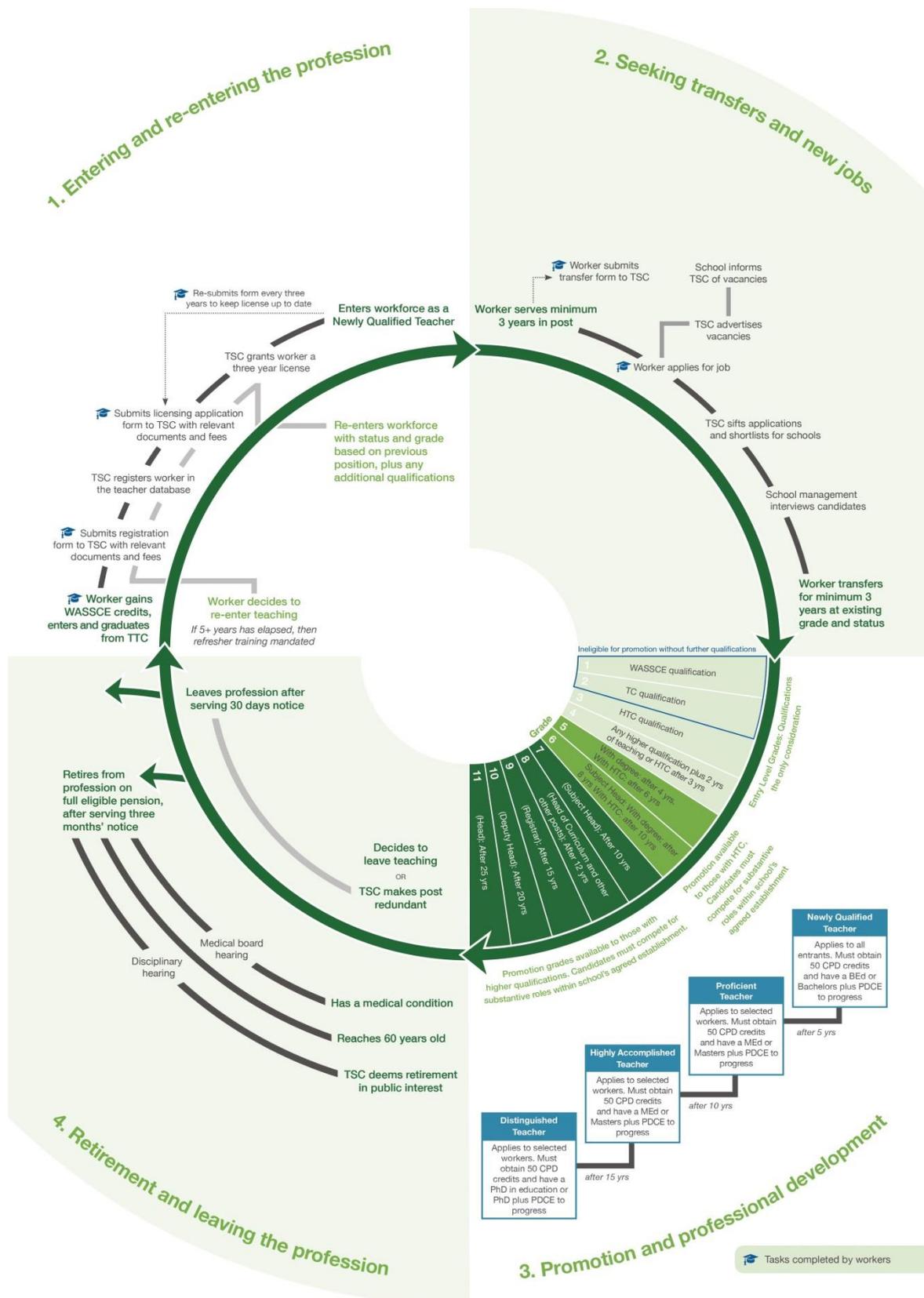


Figure 2: Theoretical Education Workforce Management system for Sierra Leone³

³ This model has been developed as a way of visualising the range of policies developed by the TSC since 2017

There are some signs of internal contradictions in aspects of the work illustrated in Figure 2, including some that may place existing workers in breach of new regulations (see Table 2). It will be important for TSC to address these as part of its next tranche of work on workforce management development, eliminating inconsistencies, and ensuring workers are aware of what is expected of them, and what is possible for their careers. For example, the new Teacher Application portal needs to be stress-tested against the current system, to mitigate risks of contradiction.

For example, at present, it is not simple to see an answer to the following hypothetical cases in Figure 2:

A teacher was recruited seven years ago to fill a post in a remote village. He only has WASSCE qualifications and has never been to a TTC. He is paid at Grade 1 but wants to progress although he is happy to stay in the village. How can he regularise his position and become eligible for promotion?

A teacher with an HTC qualification entered the workforce at Grade 3 six years ago. She has progressed quickly and is now a Grade 5 employee. She has also taken up a lot of CPD opportunities and has plenty of credits to progress to Proficient Teacher status. Does her lack of BA preclude her from this title? And if so, does that preclude her in turn from progressing further to Grade 6, if she is still classified as a Newly Qualified Teacher?

A teacher with an HTC qualification enters the workforce at Grade 3. She is deployed in a rural area, and after several years thinks about transferring to somewhere more convenient. She sees a job advertised in a town where she wants to work. Does she apply for this directly, or does she need to go through the transfer process, or both?

Table 2: Potential alignment issues between the 2017 Professional Standards and 2019 Teacher Management Policy		
Policy A	Policy B	Potential Issues
<p>The 2017 Professional Standards identify four bands for teachers:</p> <p>Newly Qualified (TC, HTC or a higher qualification)</p> <p>Proficient (minimum BA qualification, 5 years' teaching practice and 50 CPD credits)</p> <p>Highly Accomplished (minimum MA qualification, 10 years' teaching)</p>	<p>The 2019 Teacher Management Policy enumerates 11 pay grades for education workers:</p> <p>Grade 1 is for those with WASSCE only</p> <p>Neither Grade 1 nor Grade 2 (TC) is eligible for further promotion without additional qualifications</p> <p>Workers starting at Grade 3 (HTC) are eligible only to progress to Grade 6</p>	<ol style="list-style-type: none"> 1. It is unclear how or if Policy A maps against Policy B 2. The incentive to attain a higher Professional Standards band is unclear, since this does not appear to be related to either remuneration or promotion 3. In theory those with WASSCE only are ineligible to teach, although a pay grade exists. It is unclear how UUTs can regularise their position and progress. This seems especially urgent given this group is most likely to continue teaching in remote areas

<p>practice and 100 CPD credits) Distinguished (minimum PhD qualification, 15 years' teaching practice and 150 CPD credits)</p>	<p>without additional qualifications Workers starting at Grade 4 (BA and higher) are required to have 2 years' teaching practice</p>	<p>4. In theory no worker without a BA or higher qualification is eligible to take on a more senior role than Subject Head</p> <p>5. The policies imply all workers at Grades 9-11 should have attained or be close to Distinguished Teacher status⁴. However, there are differences between the two on minimum qualifications</p> <p>6. As yet, there is no clarity on what constitutes a CPD credit.</p>
<p>The 2019 Teacher Management policy identifies a process for applying for a transfer to another school</p>	<p>The same policy identifies a process for advertising teaching posts, sifting and appointing applicants</p>	<p>1. It is unclear whether these two policies can co-exist. Either the system is career-based, in which case deployment and transfer applies, or it is position-based in which case advertising and application applies. Some systems do mix approaches, but it would be very important to explain how this would work in practice.</p> <p>2. In the short term it is unclear how a serving education worker would be able to apply for a job they were qualified for, without exiting and re-entering the profession.</p>

The TSC must now foster the administrative, technical, and collaborative skills needed to run a high performing career-based education workforce management system, centrally and at district level. The range of policies and tools already developed or in progress are an important and necessary part of achieving this but not sufficient on their own. Officials will need to consider potential consequences when enforcing new rules and norms, given existing levels of compromise on issues such as worker pay and qualifications. In some cases, careful phasing in will be needed, and in others additional policies and actions will be required to ensure the system continues to function in the short to medium term.

⁴ Note: We do not intend to make a critique of whether Sierra Leone has the finances to implement this model, but to focus on possible inconsistencies and think through how improvements could work in practice. Many of the policy aims developed would require significant additional funding to be realised.

2. Workforce Engineering

2.1 Overview of issues and possible responses in Sierra Leone

The companion Recruitment and Matching, Supply and Needs, and Spatial Analysis papers include detailed analysis of the main education workforce engineering issues and policy recommendations. These include:

- A system (summarised in Figure 1 and set out in detail in the Teacher Management Policy) that focuses on the needs of the state in recruiting and deploying workers. At the same time, the system faces chronic difficulties in filling posts in remote regions. In the Recruitment and Matching paper, we propose a matching model that would allow the TSC to balance teacher preferences with system needs, resulting in more successful deployments and less absenteeism.
- A chronic shortage of qualified subject specialists in maths and sciences. In the Spatial Analysis paper, we propose a solution at secondary level that allows nearby schools to “share” the time of underused specialists attached to one location, creating learning teams. In the Supply and Needs paper, we propose a review of the match between TTC curricula on the one hand and NCTVA exams on the other in these subjects, as well as ensuring equivalence of difficulty in these exams across *all* subjects.
- The sixth lowest proportion of female teachers in systems across the world. In the Supply and Needs paper, we propose working with a development partner to provide scholarships for more female entrants to TTCs, as a nudge to secure better gender balance in the profession.

2.2 Evidence from France on matching and deployment, including hardship postings

France operates arguably the world’s highest performing career-based management structure for education workers. While it does not face the resource constraints and legacy issues of Sierra Leone, the system does offer examples of best practice solutions. It is therefore worth considering as an aspiration for the future.

The French approach to deployment and transfers offers an example of relatively successful balancing of worker preferences with managing the needs of the whole system. The existence of a transparent points system allows workers to tailor their applications for

transfer as well as initial deployment and gives them some control over planning their location over their career. For the state, the points system, combined with the use of technology means officials can be sure each year's settlement leads to the best possible use of available human resources, minimising attrition rates, as well as over or under supply of workers in schools.

The French state organises deployment and transfers once annually, aiming to fill every seat and find every worker a role. Transfer requests are considered once new teachers have been placed.

Phase 1: Assignment to Regions (November to March): Teachers submit a ranked list of regions where they would like to work, up to the full list of 31 regions. The state ranks requests on a points system that considers spousal reunification, disability, and current hardship, plus seniority, previous requests, and time spent away from home. An algorithm is used to match preferences as closely as possible against posts.

Phase 2: Intraregional Assignment (March to July): Teachers submit a ranked list of schools or locations, up to a maximum of 20. The regional bureaucracy ranks requests on the same points system as for the regional assignment. Results are put through the same algorithm to match preferences as closely as possible against available or potentially available posts.

In 2012, all new teachers were assigned a region, 57% of them obtaining their first preference. 42% of teachers requesting a new region were transferred.

Less experienced teachers do typically receive posts in hardship schools and locations. Some regions still suffer chronic worker shortages and are permitted to recruit on contract to make up the shortfall and ensure students do not suffer from a lack of teachers.

Box 1: Annual Deployment and Transfers in France⁵

Compromise is essential to balancing interests in this way. While no direct evidence exists to link this system directly with issues such as retention, teacher satisfaction or student learning, it is worth noting that France has no serious issues with teacher retention. Only 10,000 out of 800,000 teachers change job each year⁶. Most of those who do change jobs remain in the education sector. Resignation is only 0.06% and 0.09% for first and secondary level tenure respectively.

Core observations for Sierra Leone:

- This system is highly transparent and seeks to build trust between administration and workers. This is valuable currency in managing a workforce.
- Strong management capacity centrally and in the districts would be required to achieve a similar approach in Sierra Leone, as well as ensuring existing recruitment and transfer tools are adapted to feed a matching system appropriately. We discuss this in the companion Recruitment and Matching paper.

⁵ Terrier, Camille (2014). Matching Practices of Teachers to Schools – France. MiP Country Profile 20.

⁶ European Commission, Directorate-General for Education and Culture, & IBF International Consulting. (2013). Study on policy measures to improve the attractiveness of the teaching profession in Europe: Final report.

- France, in common with many career-based systems, tends to post new and inexperienced teachers to hardship posts (inner cities as well as remote locations in this case). Sierra Leone has just introduced a similar policy as a way of tackling chronic shortages of people willing to serve in some schools, which may raise concerns about learning equity. However, a systematic review⁷ finds the effect of teachers' years of experience on student learning is ambiguous, with most examples showing insignificant results.
- The alternative approach that uses incentives is also worth considering in the interest of promoting equity. In Gambia, providing hardship allowances for teachers was found to increase the share of qualified teachers by 10 percentage points as well as reduce the pupil-teacher ratio⁸. However, this is difficult to implement in fiscally constrained systems.

2.3 Evidence from Karnataka, India on workforce engineering to deliver equity

The Indian state of Karnataka administers an education workforce out of the capital in Bangalore that serves a population of 68 million people speaking multiple languages. Education management is devolved to state level, as in the cases of other large countries such as China and Pakistan. The approach to education workforce management is career based. A recent World Bank study compares progress here highly favourably with several other Indian states⁹.

Karnataka lacks female education workers as well as teachers from certain castes, tribes, and other minority groups. This causes supply restrictions in some districts, particularly where students do not speak the majority language, as well as a shortage of relatable role models for many students, and an impact on girls' enrolment. The state has used its hiring and deployment processes as a way of engineering workforce diversity over time. Interventions to engineer more diversity into the education workforce are used at four points in the recruitment process:

1. When applying, candidates must provide evidence of their eligibility under the criteria outlined for reserved minority posts;
2. Those from scheduled tribes and castes are not always required to achieve the 60% pass mark in the Teacher Eligibility Test administered to all candidates;
3. Post-test ranking includes ringfencing for a range of reservation factors, including a hard 50% allocation for female applicants;

⁷ Glewwe, P., Hanushek, E., Humpage, S., & Ravina, R. (2011). School Resources and Educational Outcomes in Developing Countries: A Review of the Literature from 1990 to 2010 (No. w17554). National Bureau of Economic Research.

⁸ Pugatch, Todd & Schroeder, Elizabeth, 2014. "Incentives for teacher relocation: Evidence from the Gambian hardship allowance," *Economics of Education Review*, Elsevier, vol. 41(C), pages 120-136.

⁹ Ramachandran, V., et al, Getting the right teachers into the right schools: managing India's teacher workforce, World Bank Group 2018

4. Merit candidates from scheduled tribes and castes are given first choice of the block (sub-district administrative unit) where they wish to be posted, ahead of merit candidates from the general pool.

Karnataka demonstrates how processes can be tailored to tackle problems such as lack of workforce diversity, or filling posts that are difficult to match from the existing population. This happens in two ways. First, recruitment criteria have been engineered to be inclusive, with set proportions for sex, scheduled tribes and castes and other issues of interest. Second, the matching system is also shaped to favour both minority candidates and those who perform best in the entrance exam, in the interests of both diversity and quality.

Core observations for Sierra Leone:

- This system demonstrates how policymakers can engineer more diversity and equity into the workforce, without making major compromises on the quality of entrants to the teaching profession.
- Other forms of affirmative action systems that can be introduced to strengthen workforce diversity include offering scholarships at pre-service training level for specific groups. In the case of Sierra Leone this might include women, but also those who wish to specialise in subjects such as maths and science where there is a shortage. We discuss this approach in more detail in the companion Supply and Needs paper.
- The Karnataka approach does allow for some candidates taking the entrance exam to become teachers with a lower pass mark than others. This applies principally to those from scheduled castes, or non-majority language speakers who can be posted to schools where posts are hard to fill for language reasons. In the companion Recruitment and Matching paper, we discuss some options for improving the skills and qualifications of UUTs as a short to medium term way of keeping posts filled in particularly remote locations.

3. Worker Supply Chain Quality

3.1 Overview of issues and possible responses in Sierra Leone

The companion Recruitment and Matching, Supply and Needs, and Spatial Analysis papers include detailed analysis of the main education worker supply chain issues and policy recommendations. These include:

- Weak collaboration between parts of the education system. As a result, while the TSC focuses rightly on ensuring all teachers are qualified and licensed to practice, issues remain with the quality (and consistency) of pre-service training offered by TTCs, as well as disconnects between training and examinations for trainee teachers, and between the pre-service and school curricula. In the Supply and Needs paper we recommend commissioning a fundamental review of pre-service curricula and these links in the short term.
- A situation where almost 40% of the current education workforce is not qualified as a result of successive crises including conflict, Ebola, and a chronic lack of fiscal space to put new teachers on payroll. In the Recruitment and Matching paper, we recommend a range of phased approaches to enable the TSC to reach its goal of ensuring all teachers are qualified while ensuring the system can continue to operate as the professionalisation of the workforce takes place.

3.2 Evidence from Chile as an example of whole supply chain strengthening

The *Transforming the Education Workforce* report¹⁰ emphasises the workforce lifecycle as a concept. We also use a lifecycle framework in the companion Supply and Needs paper where we identify a range of issues at different points in the lifecycle: from entry to TTC, through deployment, to learning outcomes being achieved in the classroom, to preparedness of new candidates to study to become teachers themselves.

One of the principal points made in *Transforming the Education Workforce* about a pipeline of new teachers into a system is how to tackle the fact that “in many contexts, the teaching profession is characterised by low pay, low prestige, and low status and is seen as a *profession of last resort*.”¹¹

¹⁰ The *Transforming the Education Workforce*: Learning Teams for a Learning Generation, The Education Commission 2019

¹¹ Ibid. Page 60

A common response is simply to raise the bar to enter teacher training college, or otherwise to require all teachers to have attained additional paper qualifications as a proxy for their ability to teach in practice. We discuss the disconnect that exists in many countries between qualifications and practice below. The *Transforming the Education Workforce* report acknowledges this is not a sufficient policy response and can produce unintended negative consequences. It focuses instead on a richer, more holistic approach to raising the attractiveness as well as the standards of the teaching profession.

In Chile, workforce reforms have taken this form with the aim of improving the pipeline of new teachers into the system. To support the move to raise entry requirements for teacher training, the Chilean government has taken steps at four other points in the teacher lifecycle by:

Training: Launching scholarship programs to attract the brightest candidates. This mechanism is also being used to address equity concerns, not only bringing in more trainee teachers from disadvantaged backgrounds, but also requiring scholars to work for the first three years of their career in “vulnerable” schools.

Pay & Professional Development: Introducing a new pay scale linked to teacher performance. Teachers get support in the form of free training and professional mentoring, as well as formal induction to new jobs.

Preparation Time: Protecting legally an uplift in teachers’ hours for non-teaching tasks, including lesson planning, assessments, and peer collaboration.

Peer Networks: Encouraging teachers to collaborate with colleagues in the same school, as well as engaging with other professional networks.¹²

Core observations for Sierra Leone:

- The recommendation of the Education Workforce Initiative’s 2019 report is that countries should look at the whole workforce lifecycle when designing and enacting reforms. This is an approach we have taken in the companion Supply and Needs paper when looking in depth at the workforce supply chain in Sierra Leone. Taking this view relies on strong collaboration to ensure policies are well aligned (for example on teacher training and on the minimum requirement for deployment) across the mandates of different organisations, such as the TSC and TTCs.
- In the case of Chile, introduction of a new pay scale with direct links to teacher performance was part of the package of reforms. In Sierra Leone, the TSC’s 2017 work on teacher professional development, and the introduction of a clear pathway for progression seemed to signal a move towards something similar. It will be important to reconcile this work with the grade protocols in the 2019 Teacher Management Policy, as outlined in Section 1 above.

¹² Adapted from Reference: Naylor, R. et al, Strengthening the Education Workforce, Education Development Trust 2019, background paper for the Education Workforce Initiative

- Other reforms enacted by Chile, such as clearly protected time for non-teaching tasks, and the latitude to collaborate with other teachers depend in turn on enabling (and equipping) school leaders to make this possible. Building capacity for better school level management is an important part of supporting teachers to work effectively.

3.3 Evidence from other African countries on the importance of pre-service training quality

A recent multi-country study¹³ uses primary research conducted in Kenya, Mozambique, Nigeria, Senegal, Tanzania, Togo, and Uganda to demonstrate that of more than 3,750 4th grade teachers:

1. 66% possess 80% of the **language** knowledge equivalent to the 4th grade standard in their national curriculum, ranging from 26% in Nigeria to 94% in Kenya.
2. Of these, just 7% possess the minimum subject knowledge required to *teach language* at 4th grade, ranging from 0% in Mozambique, Nigeria, and Togo to 34% in Kenya.
3. 68% possess the minimum subject knowledge required to teach **mathematics** at 4th grade, ranging from 49% in Togo to 93% in Kenya.¹⁴

Results were also weak for aspects of pedagogical knowledge, assessing students and classroom skills and practice. Observation of classroom practice among more than 1,500 of these teachers found, for example, that:

1. Only 41% **introduced and summarised the lesson topic**, ranging from 16% in Mozambique to 62% in Kenya
2. Only 31% asked their students a **mix of higher and lower order questions** in a lesson, ranging from 14% in Mozambique to 44% in Uganda.
3. Just 8% introduced the topic, ran an obviously planned lesson, asked a mix of questions, *and* gave positive feedback and corrected mistakes, ranging from 1% in Mozambique to 17% in Kenya.

Yet all teachers in the sample were licensed, qualified members of the profession. 90% of them held a teaching certificate only, with the additional 10% also having achieved either a bachelors or masters degree in education.

The evidence for many teacher training systems suggests endemic weaknesses that have a negative effect on the quality of the workforce supply chain. Minimum standards for entry are often lower than for other tertiary education options. Programs themselves are

¹³ Bold, T. et al, Enrolment without Learning: Teacher Effort, Knowledge, and Skill in Primary Schools in Africa, Journal of Economic Perspectives Volume 31, Number 4 Fall 2017 pages 185–204

¹⁴ A language teacher is defined as having minimum knowledge for teaching if he/she scores at least 80 percent on the grammar, Cloze test, and correcting a student's composition task of the language assessment. A mathematics teacher is defined as having minimum knowledge for teaching if he/she scores at least 80 percent on the tasks covered in the math curriculum up to grade 4.

often of low quality, and do not manage the ill-preparedness, including lack of basic subject knowledge, of many students who have themselves graduated from weak school systems. Bold et al (2017) cite Nigeria, where the training curriculum devotes more than twice the time to theory than to maths, English, and science.

Rather than backfilling necessary subject knowledge, teacher training programs tend to focus on teaching methods and pedagogical theory, but to weak effect as indicated above. Meanwhile exposure to classroom practice pre graduation is often very limited. Bold et al (2017) cite Kenya, as an example, with just six weeks practice, as well as a similar effect from a highly condensed training program in Senegal.

Core observations for Sierra Leone:

- Evidence from elsewhere in Sub Saharan Africa illustrates the possibility of a disconnect between the official qualifications required to enter the teaching profession and true preparedness to teach children effectively. This is a major consideration for the TSC as it seeks to regularise the qualifications of the cadre in Sierra Leone. It will be important to ensure relying on official qualifications is an effective signal that teachers will teach well.
- Poor pass rates at WASSCE level across the board, and particularly in the core mandatory subjects English and maths, discussed in our Supply and Needs paper suggest there may be some weaknesses in subject knowledge among student teachers in Sierra Leone's TTCs. The evidence from comparator countries given here on teachers' subject knowledge at Grade 4 suggests it will be important to consider this aspect when reviewing the curriculum, as recommended in our companion paper.
- The disconnect between teacher qualifications and teacher readiness to teach explored here for several countries highlights one of the major risks of a fragmented education sector. The development of processes for one institution and its mandate alone is insufficient to deliver a system that works in practice. In the case of Sierra Leone, TSC is dependent on the TTCs' ability to produce graduates who are ready to teach. Similarly, the TTCs are dependent on a supply of school graduates who are ready to learn how to teach. Increasingly effective collaboration between the TSC, TTCs, MTHE and MBSSE will be critical in this and other areas.

4. Data for Decision Making

4.1 Overview of issues and possible responses in Sierra Leone

Effective use of data for workforce, as well as other forms of education policymaking, is both immensely powerful, and a perennial issue for many education systems. A recent World Bank portfolio review of global EMIS between 1998 and 2014 found that: “one of the common problems faced by the countries was the inability of the government to use the available information and education statistics to inform policy choices. Even when an EMIS was effectively implemented, it was not used by education stakeholders (e.g., teachers, parents, policy makers) to inform progress by the schools/education system.”¹⁵

Our specific recommendations in the area of data are presented in the form of two data-driven tools to assist policymakers, in the Spatial Analysis and Recruitment and Matching papers respectively:

- The Spatial Analysis paper uses GIS data and mapping of resources to help develop the concept of remoteness, revised in 2019 by the TSC as an important factor in choosing where to deploy teachers. Among other things, it highlights issues such as the fact that there are larger disparities in PTRs inside particular districts, rather than between districts, as well as advancing an idea for “sharing” scarce resources such as maths specialists between nearby schools, using a learning team approach.
- The Recruitment and Matching paper presents a new algorithm that TSC could use as part of its deployment approach for new teachers. This is designed to minimise the mismatch between teachers’ personal preferences and the needs of the system to ensure more deployments are successful, minimising requests for early transfers as well as absenteeism linked to post location. This approach is similar in intent to the systems in France and Karnataka discussed in Section 2 above.

4.2 Implementation challenges in Lebanon

As discussed above, international evidence suggests that investing in the way a database is used in practice, including ensuring appropriate access for all relevant officials, is at least as important as the design and build of a high-quality IT system.

¹⁵ Abdul-Hamid, H, et al, Lessons Learned from World Bank Education Management Information System Operations: Portfolio Review, 1998–2014. World Bank (2017)

To date, the Lebanese Ministry of Education and Higher Education has invested approximately \$20 million using a mix of government funds, soft development loans, and bilateral donations over the last decade in building a digital school information management (SIMS). However, the information it contains is rarely, if ever, used to inform policy making.

In 2018, while SIMS contained valuable information, officials were not using data to inform planning, forecasting or budgeting. For many Directors and their teams, SIMS seemed to be an electronic version of their existing paper-based system, with the disadvantage of not being under their control. No training had taken place to explain the system to officials, and access to information required applying to IT to run a query. A World Bank review of the project recommended the Ministry:

1. Recognise SIMS as a tool to support improved policy and decision making, rather than an IT project, building the development team to include a mix of education and data specialists, and locating them in a planning office rather than the IT department.
2. Transition from the use of data for compliance purposes to...enhancing...the system, enabling and supporting increasing levels of evidence-based policy making.
3. Transition from being donor-dependent, building capability in the ministry to manage the system without the intervention of external consultants.

These recommendations echo the Bank's 2017 global portfolio review of EMIS development worldwide.¹ SIMS, like many IT investments in public education systems, lost sight over the years of its purpose. The publication in 2019 of a simple IS strategy has helped to re-align priorities to focus on capacity building and access to the system, rather than investing in further technology at this point.

Box 2: Developing a School Information Management System in Lebanon¹⁶

Additional issues include the proliferation of parallel data systems, driven partly by the invisibility of SIMS, and partly by competition between actors in the education system. As a result, development partners find it hard to understand which data they can trust, while disputes can arise between departments and institutions about which numbers are most accurate.

Core observations for Sierra Leone:

- The TSC is in the process of building a digital HRM system linked to the payroll system. Meanwhile, the National Accountant's Office has the strongest existing teacher payroll but covers only government employees for obvious reasons. The latter is already being used in health to control absenteeism by withholding pay. The experience of the Lebanese government suggests it will be critical to ensure these two systems work together, and do not compete. This is also relevant to potential overlap between the TSC's Teacher Management policy and DSTI's planned jobs portal.

¹⁶ Adapted from Education Global Practice MENA, Data Collection and Management for Improved Institutional Development, World Bank Group 2018, plus author's own experience of working in the Ministry between 2016 and 2018

- The new HRM system has the potential to be a transformative tool for TSC's management of the education sector workforce. However, just as developing policies on standards does not on its own ensure high quality teaching, extracting value from the new HRM system will require significant investment in developing officials' capacity to make use of it, as well as ensuring appropriate and secure levels of access to data.
- Designing a clear information management systems framework for the education workforce should be a priority for the TSC and its partners in the sector. Several databases exist already, ranging from EMIS to the new HRM system. Adding more data to these, in the form of a matching model as presented in our Recruitment and Matching paper or using remoteness analysis as suggested in our Spatial Analysis paper, will require increasingly strong management of the data landscape.

4.3 Opportunities in user driven data and IT from France and Pakistan

In **France**, deployments and transfers in education are managed using a bespoke algorithm. This analyses data provided by all new entrants to the system and transfer requests from existing workers, to create the best possible settlement for the year. This IT-based, information rich approach optimises worker preferences within the boundaries of what the state system requires. This is an efficient and transparent solution to a problem that affects career-based education systems globally. Giving agency to workers is important for building trust between them and the state, while the use of technology means it is difficult for well-connected employees to game the system.

Parts of **Pakistan** have also made highly effective use of data, and mobile technology for education workforce management over the past decade. Punjab province has an education workforce that includes 400,000 teachers. One early use of mobiles was to enable field-based monitoring of teacher presence in class. Armed with this data, the School Education Department managed to halve absenteeism between September 2011 and December 2012, solving a chronic issue for the province, even in the most remote districts.¹⁷

Almost a decade later, the Punjab Information Technology Board and the School Education Department jointly launched the Teacher eTransfer System in 2019, in response to teacher complaints about the time consuming and opaque posting transfer process. eTransfer is available for anyone to download in the Google Playstore and puts workers in charge of their own transfer application.

It involves a simple three step process. Workers apply for a transfer using the app, including up to five preferences for location. Their request is automatically waitlisted. Once approved, the district sends an automated transfer order with a QR code.

¹⁷ Barber, M. The Good News from Pakistan, Reform 2013

Early results suggest eTransfer:

1. Significantly reduces the amount of time spent on human resource management. SED estimated it was spending 90% of its time on this, and over half of office hours on transfers and deployment alone.
2. Reduces scope for using clientelism and political power to influence transfer and deployment decisions. This is important in an environment where teachers are traditionally heavily involved in elections.

Almost 400,000 Public School Teachers

108 Verifying Authorities

Available Across 36 Districts of Punjab

Real-time tracking of transfer applications

Auto-generated transfer orders with QR code

School Education Department
Government of Punjab

E-TRANSFER for Public School Teachers - 2019

System Modified - Transfers Simplified

KEY FOCUS

1. Transparency and merit-oriented
2. Standardized and easy to use
3. Minimum human interference and favoritism
4. Improving student teacher ratios
5. Facilitation for Open-merit, Wedlock, Compassionate and Mutual Transfer.

Application cycle starts from 17-05-2019

3 Simple Steps

1. Download App and login
2. Verify teacher data
3. Enter preferences and click submit

Takes less than 10 minutes!

ANDROID APP ON Google Play

SCHOOL EDUCATION DEPARTMENT
For details visit: schools.punjab.gov.pk

Powered by Punjab Information Technology Board

Figure 3: English language launch advert for eTransfer¹⁸

Core observations for Sierra Leone:

- These examples from France and Pakistan focus on worker agency as an important determinant of managing the education workforce. They use technology to give workers an active role in the deployment or transfer process. These adjustments can strengthen workers' perceptions of a fair, transparent system.
- Both eTransfer and the French matching model seek to align as far as possible the preferences of workers with the needs of the system. Introducing a matching model as discussed in our Recruitment and Matching paper may be a useful way for Sierra Leone to begin trying to align incentives between system and workforce.

¹⁸ <https://schools.punjab.gov.pk/system/files/E-Transfer.pdf>

5. Locus of Decision Making

5.1 Overview of issues and possible responses in Sierra Leone

In this paper, we have touched on collaboration between institutions in several places, particularly between the TSC and TTCs in Section 3, and between the TSC and other parts of government in Section 4. In addition to cross-institutional and cross-government working, the question of where decisions are taken on issues of workforce management is an important one. While we do not address this in detail in companion papers, it is worth considering here.

Sierra Leone, like many countries in Sub Saharan Africa, has a long-established framework of sub-national administration, with responsibilities that include education. District, chiefdom, and school level decision making has been particularly important for education during times of crisis. Many serving teachers are supported financially, as well as chosen, by their communities at present.

The TSC's reform strategy, as discussed in Section 1, is focused on restoring and improving on a well-managed career-based system in education. Policy documents published to date, particularly the 2019 Teacher Management Policy look at the workforce lifecycle from a rather centralised perspective. Technical experts working with TSC talk about 'cascading' new approaches out to the districts.

It will be important not to lose the benefits that can accrue from devolving appropriate decisions to sub-national levels when enacting reforms, for three main reasons:

1. Central institutions rely on sub-national structures, from school level upwards, to supply them with information, ranging from formal data for the Annual School Census, to accurate information about the needs of schools. This is more likely to be supplied in an accurate and timely manner when schools, chiefdoms and districts feel they have agency as well as obligations in administering the sector.
2. While central institutions have an important role in holding the overview of the system, it is at more local levels that organisations understand the detail of what is happening, and what is needed. The Spatial Analysis paper provides an interesting example of this when it uses GIS mapping to show the major disparities in PTRs in Sierra Leone are at intra, rather than inter district level.
3. At school level, empowering and training leaders to take on career, as well as team, management of teachers is important. As discussed in Section 3, one of Chile's successes has been in ensuring teachers have time and are encouraged to collaborate with others. This is a good example of a central directive that principals can then interpret in the context of their own school.

The TSC has a district level network of officers in place, working with the District Office. It will be particularly important to ensure their work and that of the DEO is well defined, that mandates are clear, and that collaboration between them mirrors collaboration at the central level.

5.2 Managed devolution in Karnataka

Figure 4 summarises the annual process of identifying and sanctioning new posts in Karnataka. Each administrative level, from block to district to state, has both responsibilities for gathering and aggregating information, and for making decisions on allocations.

While the central administration in Bangalore sets policy and controls fundamental choices, much of the administration and micro-level decision making is devolved to district and block level officials respectively. This makes the most of local knowledge at block level to obtain a more accurate picture of real requirements. Transparency in the process (for example in the principle of allocating sanctioned posts in direct proportion to original requests at block and district level), helps build the sense that all parts of the state are being treated fairly.

Discussion of what can be afforded happens at state level, involving not only the Ministry of Education, but also the Ministry of Finance and Chief Minister's Office, with Finance having the final say. Another benefit of appropriate devolution of powers is that it frees the Ministry of Education at state level to focus on putting together the best possible case for the sector, and managing the negotiations, rather than on the minutiae of individual or district level transfers and deployments.

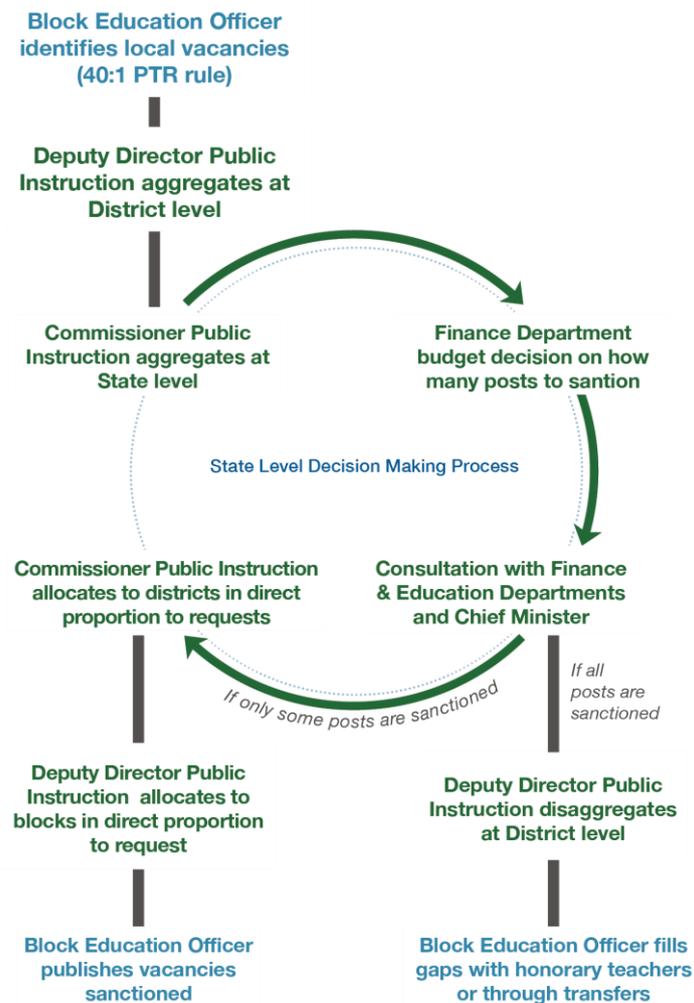


Figure 4: Annual postings and transfers process in Karnataka¹⁹

Similarly, as discussed in Section 2, primary selection of candidates for posts takes place through a centrally administered test, allowing the state to control for quality and engineer diversity into the workforce. But it is at block level, once new teachers have expressed their preference for location, that detailed deployment is determined. This is another example of locating administrative decision making at the most appropriate level, while maintaining the integrity of a true career-based approach to teacher workforce management.

Core observations for Sierra Leone:

- According to the Teacher Management Policy of 2019, schools and districts both have a role to play in key processes such as teacher recruitment. At district level this is closely focused on the TSC officer and does not mention the broader district administration for education. The TSC's district level officials work within the District Education Office structure, with dual reporting into the DEO and the TSC. If locally based officers are to navigate this kind of complex matrix management

¹⁹ Adapted from Ramachandran, V., et al, Getting the right teachers into the right schools: managing India's teacher workforce, World Bank Group 2018

system effectively, it is very important that collaboration between TSC and MBSSE is strong, and is also seen to be strong outside Freetown. Achieving this will be critical if TSC is to be able to delegate suitable decision making on human resources management to the district level in the future with confidence. The DEO office and the TSC officer must work together to avoid situations that put the excellent work already done on norms, regulations and expectations of education workers in jeopardy. One of the strengths of the example from Karnataka is that it is extremely clear on mandates and demarcation lines.

- The Teacher Management Policy has a clearly developed protocol for teacher appointment against posts, with roles for schools, districts and the TSC. School level responsibilities are strong, including identifying vacancies to be filled, and interviewing and choosing candidates, based on the guidance. However, the role of the district is concentrated on acting as an aggregator of information from school and passing them up to the TSC or passing guidelines down to schools. There may be more that this level of administration can and should do to add value to processes. For example, in a situation where Sierra Leone adopted a learning teams approach to sharing maths specialists, as discussed in the companion Spatial Analysis paper, the involvement of districts to manage this would be crucial.

5.3 Further examples of devolved decision making from Sub Saharan Africa

The following range of examples from African countries demonstrates that devolution of responsibility can take place successfully at all points in the system, from the school level up. They also suggest it is worth considering managed delegation from across a wide selection of areas connected to education workforce management, from recruitment to deployment and transfers, and from monitoring absence to providing well targeted CPD.

School Level

Lesotho allowed each school to advertise posts and select its own teachers. This resulted in very few unfilled posts and a high level of local recruitment of teachers, but an uneven distribution of the best-qualified teachers.

In Gambia, head teachers are expected to monitor teacher absence and restrict the absence of each individual teacher to a maximum of two days per month.

Sub-National Level

Eritrea uses a planned deployment system at two levels. At the national level, teachers are assigned to one of the six zobas (regions). The management at the zoba level then allocates the teacher to a specific school.

Zambia uses a planned deployment system that incorporates some elements of individual choice. Candidates are asked to apply directly to the district(s) in which they are willing to work. All the applications are brought together for a meeting of district officers...at which candidates are selected and deployed. This meeting is monitored by a panel of observers, including representatives of a teachers' union and the Zambian president's office, to ensure that the process is fair.

Multi-Level

[In Zambia, CPD is] provided at three levels, the school, zona, and district. Each school has a school INSET coordinator who works with the head teacher to identify training needs within the school [which can] arrange in-house training or request assistance from the zonal or district level. Within each zona there is a resource centre, and a zona INSET coordinator. At district level, there are resource centres often equipped with libraries, photocopying facilities, computers, printers, and internet access. Each has a full-time district INSET coordinator.

Box 3: Approaches to Devolved Decision Making in African Countries²⁰

For the TSC, one of the benefits of its investment in high quality policies and tools for managing the workforce should be that it can introduce elements of devolved decision making with confidence.

²⁰ Mulkeen, A. Teachers in Anglophone Africa: Issues in Teacher Supply, Training and Management, World Bank 2010

6. Conclusion

This paper began by summarising the work of TSC since the activation of the 2011 Act and discussed the organisation's strategic intention of restoring a high-performing career-based education workforce management system in Sierra Leone. It also identified the main weaknesses or risks inherent in adopting this approach, regardless of location or economic circumstances as follows:

1. Requires strong, technocratic central planning and budgeting
2. Creates matching issues between workers and needs of the system
3. Requires strong school to government links, excellent data, or both
4. Lacks flexibility in the event of shocks to the system (e.g. refugees)
5. Difficult to remove poor performers or reward excellent ones

The paper has discussed the first three of these issues in various ways, referring to the three companion technical papers for detailed analysis of specific issues as well as full policy recommendations.

Of the other two, the question of shocks to the system is one with which Sierra Leone is deeply familiar and will be tested on once again along with the rest of the world as it seeks to respond to the impact of COVID-19. Sierra Leone has much to teach other education systems about resilience under pressure and will undoubtedly be called on to do so in the coming months and years.

On the final issue of performance management, the TSC's policy development contains some contradictions. Figure 2 shows two parallel views of how teachers progress in their careers. The Teacher Management Policy of 2019 on the one hand, enumerates 11 grades, the higher of which require additional formal qualifications and include all school based administrative roles. On the other, the Teacher Service Standards of 2017 focus on a four-step career progression linked to performance and CPD credits, as well as qualifications and time served. It will be important for the TSC to clarify this, and take a clear decision about whether or not it is feasible to link promotion to performance within the civil service legislative framework.

The subsequent sections sought to provide material for future policy dialogue discussion on four key management topics, drawing heavily on examples from other systems worldwide:

2. Workforce Engineering
3. Worker Supply Chain Quality
4. Data for Decision Making
5. Locus of Decision Making

Each of these sections includes responses to some of the inherent weaknesses of career-based workforce management approaches. For example, Sections 2 to 4 emphasise the

need for strong planning and budgeting capacity. Sections 4 and 5 are particularly important in the event of economic or conflict driven migration, resulting in unexpected shocks to the school system. They also shine a light on the importance of strong links from school, to district, to central administrative level.

In every case, the evidence presented highlight one additional vital ingredient for successful workforce management in education: effective collaboration. In Section 4, the Punjabi School Education Department has joined forces with the Punjab Information Technology Board to create an app for managing teacher transfers, while arguably one of Lebanon's major mistakes was trying to build an EMIS in house, rather than outsourcing and managing the contract. In Section 5, the Karnataka State Education Ministry devolves appropriate decision making on deployments to district and block level. And at the same time, the Ministry works with Finance and the Chief Minister's Office to reach a compromise on sanctioned posts for the year.

Effective collaboration is vital for the proper functioning of every education system in the world. Even where Ministries of Education have almost total control over the sector, it remains essential to collaborate effectively with the Ministries of Finance, and Planning where these exist. In most cases responsibility for the education sector, and within that the school sector, is shared between several entities. If these fail to work together well, through poorly defined mandates, or lack of respect for mandates, professional or technical skills, the results can be catastrophic for teachers, schools, and students.

This is especially important for Sierra Leone at a point where education has been identified publicly as a national priority. The establishment of the TSC with a clear mandate for taking responsibility for managing all aspects of the education workforce was an excellent step. And the institution has demonstrated in a few short years that it is keen to move quickly and decisively to build quality into the system. However, as discussed elsewhere in this paper, delivery of policies and management tools alone is insufficient to transform a workforce. This will require tenacious and consistent collaboration with others.

In the two to three years that TSC has been mandated to act on workforce management, the institution has accomplished much, all to a high technical standard. The next phase of development will require some fresh skills and approaches to problem solving to ensure the range of policies and management tools can be well used in the future. This report is a starting point for the discussion to take place with a range of stakeholders and partners - once the global pandemic situation permits- on how best to support TSC to achieve its impressive ambitions.