Coherent for Equitable Learning? Understanding the Ethiopian Education System

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Key Points

- This Insight explores what it means to examine 'coherence' within the Ethiopian education system, and how to understand whether the system is coherent for achieving equitable learning.
- In order to do this, Pritchett's (2015) RISE model is adapted for the Ethiopian context, particularly by taking account of the range of actors in the Ethiopian education system. This includes donors, who (alongside the Ministry of Education) play a crucial role in shaping the country's education agenda, and the sub-national political actors involved in service delivery within a largely decentralised system.
- The document further identifies the multi-dimensional dynamics of accountability relationships between the different actors who affect coherence in the system, and the importance of exploring changes over time from the design to implementation of policy.
- Following the adaptation of Pritchett's (2015) RISE model, particularly by including insights from Kingdon et al.'s (2014) political economy framework, lessons are drawn for moving from the theory to practice of systems research for the RISE and ELP projects in Ethiopia.

Introduction

In order to learn more about the effectiveness of recent education reforms in Ethiopia, the Research on Improving Systems of Education (RISE) and the Early Learning Partnership (ELP) projects are adopting a 'systems approach' to research (Moore, 2015). In our research in Ethiopia, we aim to understand the extent to which the education system is coherent for equitable learning– for RISE, in relation to the General Education Quality Improvement Programme (GEQIP, a large-scale package of education reforms now starting its third phase)[2], and for ELP, in relation to the introduction of 'O-Class', a new pre-primary early learning programme. This systems approach will allow us to examine the extent to which reforms are having an impact on the development of cognitive skills at primary school and school readiness respectively, and the reasons for any observed impact (or lack thereof).

The RISE and ELP research adopts a two-pronged approach to understanding 'coherence for equitable learning' within the Ethiopian education system. Firstly, recognising that learning outcomes are low for the majority of the school population, we aim to understand the extent to which recent education reforms improve low levels of learning for the majority; existing evidence points to a 'learning crisis' in Ethiopia in which the majority of children are not being prepared for schooling, and many are not sufficiently developing basic numeracy and literacy skills while in primary school (Woldehanna et al., 2016). Secondly, since children from marginalised backgrounds are the least likely to be learning, and evidence indicates that learning gaps between less and more advantaged groups start even before children start school (Woodhead et al., 2017), we focus on the extent to which education reforms improve learning for the most disadvantaged children in Ethiopia. This is particularly important since learning gaps in the early years of

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[2] For a summary of RISE Ethiopia research objectives, see https://www.riseprogramme.org/countries/ethiopia/rise-ethiopia-research-overview-technical.

schooling can become reinforced and affect opportunities for learning later on in school and beyond, including with respect to access to higher education (Rose et al., 2016). The RISE and ELP research is particularly interested in how opportunities vary among disadvantaged groups, linked to poverty, gender, or location, and including pastoralists, linguistic minorities, and children with disabilities (Woldehanna and Jones, 2006; Woldab, 2012; Tesfay and Malmberg, 2014; Beyene and Tizazu, 2010).

For our RISE Ethiopia research, it is clear that planning documents in Ethiopia include a focus on learning outcomes, but to date this has been less apparent with respect to equity. However, as GEQIP moves into its third phase, there is an increased focus on equity – this phase of reforms is in fact named 'GEQIP-E', in recognition of its attention to 'E' for equity (World Bank, 2017). Programme documentation includes more explicit attention to the challenges facing girls, children with special educational needs, and children from pastoralist communities. While it is therefore clear that there is greater recognition of equity issues within the education system, questions remain on whether these strategies are appropriate to meet the learning needs of different groups and, if so, whether these strategies are implemented effectively. These questions on design and implementation are at the heart of our approach to understanding the effectiveness of Ethiopia's education system.

In this document, we outline a conceptual basis for examining whether there is 'coherence' in the Ethiopian education system with respect to equitable learning. Our approach includes a model of accountability relationships within the Ethiopian system using a framework drawing on Pritchett's (2015) and di Gropello's (2004) work on accountability within education systems. We also draw on Kingdon et al.'s (2014) approach to political economy analysis as a guide to understanding the multi-dimensional nature of power dynamics within these accountability relationships, and we further consider change over time from the design to implementation of education reforms.

The intention of this document is not to provide a comprehensive review of existing literature on accountability and the political economy of education. Rather, in developing this conceptual framework, we limit our focus to the literature that is most relevant to the RISE and ELP research. Pritchett's (2015) RISE framework is therefore our starting point, and we then engage with Kingdon et al (2014) as a key paper which provides a conceptual approach to political economy analysis within the field of education specifically. This abbreviated approach to conceptualisation is in the interest of moving from the theory to practice of systems research, for the purposes of collecting data in the initial phases of our RISE and ELP research and in order to inform subsequent work in this area. At the end of this note, we offer reflections on how our conceptual framework will guide key stakeholder interviews and other methodological approaches as part of a systems approach in the RISE and ELP research.

Accountability within education systems

Conceptualising 'coherence' within an education system

The question posed by Pritchett – "Why is it that (some) education systems have succeeded so impressively at some aspects and yet failed so dismally at others?" (2015:39) – is particularly relevant for Ethiopia. Access to primary education in Ethiopia has expanded dramatically over the past 20 years, but learning outcomes have not kept pace over the same period – in spite of the explicit focus of GEQIP reforms to improve learning outcomes since 2009 (Woldehanna et al., 2016), and of O-Class reforms to improve school readiness since 2010. Pritchett's proposed explanation for such an outcome is that, although an education system may "proclaim the goal of achieving uniformly high levels of learning," it can become:

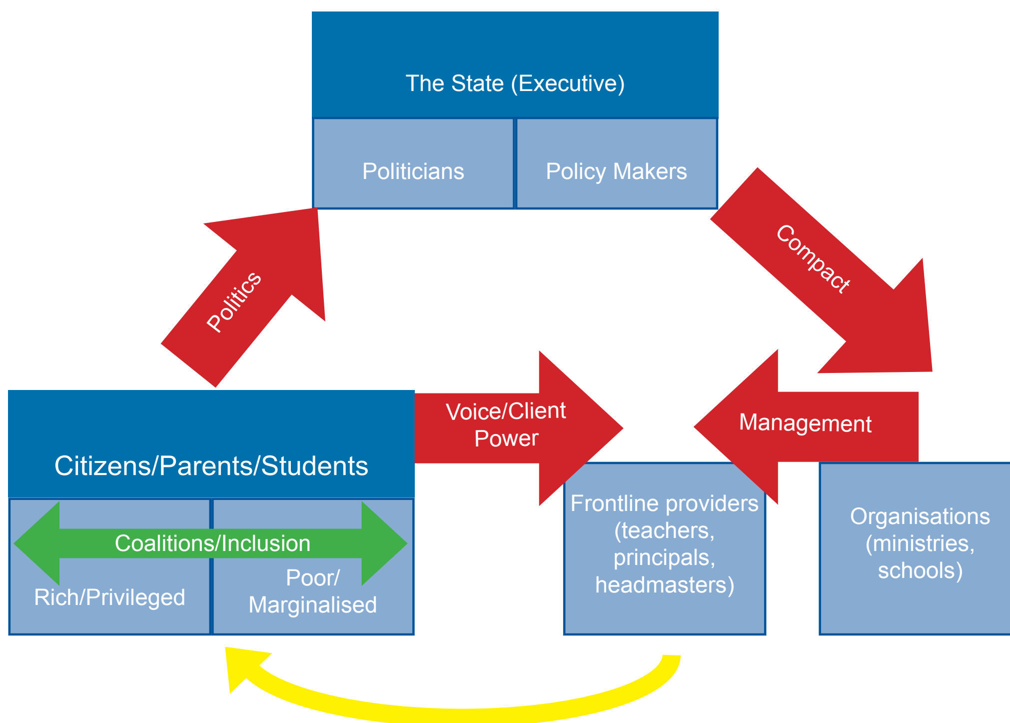
> *"for a variety of reasons, coherent only to the purpose of schooling. That is, systems of relationships of accountability [are] adequately coherent to produce continued progress in enrolment and grade attainment expansion […] but [are] incoherent for learning both within, between, and across elements of accountability".*
>
> *(Pritchett, 2015:39)*

The RISE and ELP research further hypothesises that a reason for learning outcomes not keeping pace is due to the increased diversity of children within school as it has moved from an elite to a mass system within the period of two decades. This raises a further question about whether there is coherence with respect to improving learning for those who face the greatest disadvantages due to their background. As our analysis of Young Lives data shows, for example, first generation learners are less likely to be learning (Iyer et al., forthcoming). The challenge of achieving equitable improvements in learning is of particular importance to Ethiopia, which has a very diverse population, among which over 90 different languages are spoken.

Pritchett (2015) conceptualises an education system as comprised of a series of accountability relationships between four different sets of actors: **citizens, parents and students; the state; organisational providers of schooling**; and **teachers** (2015:15–see Figure 1). The accountability or 'principal-agent' relationships between each group of actors (**politics, compact, management,** and **voice/client power** relationships) consist of four 'design elements': delegation, finance, information, and motivation (Pritchett, 2015:16).

Figure 1: Accountability relationships within an education system (Pritchett, 2015: 17)

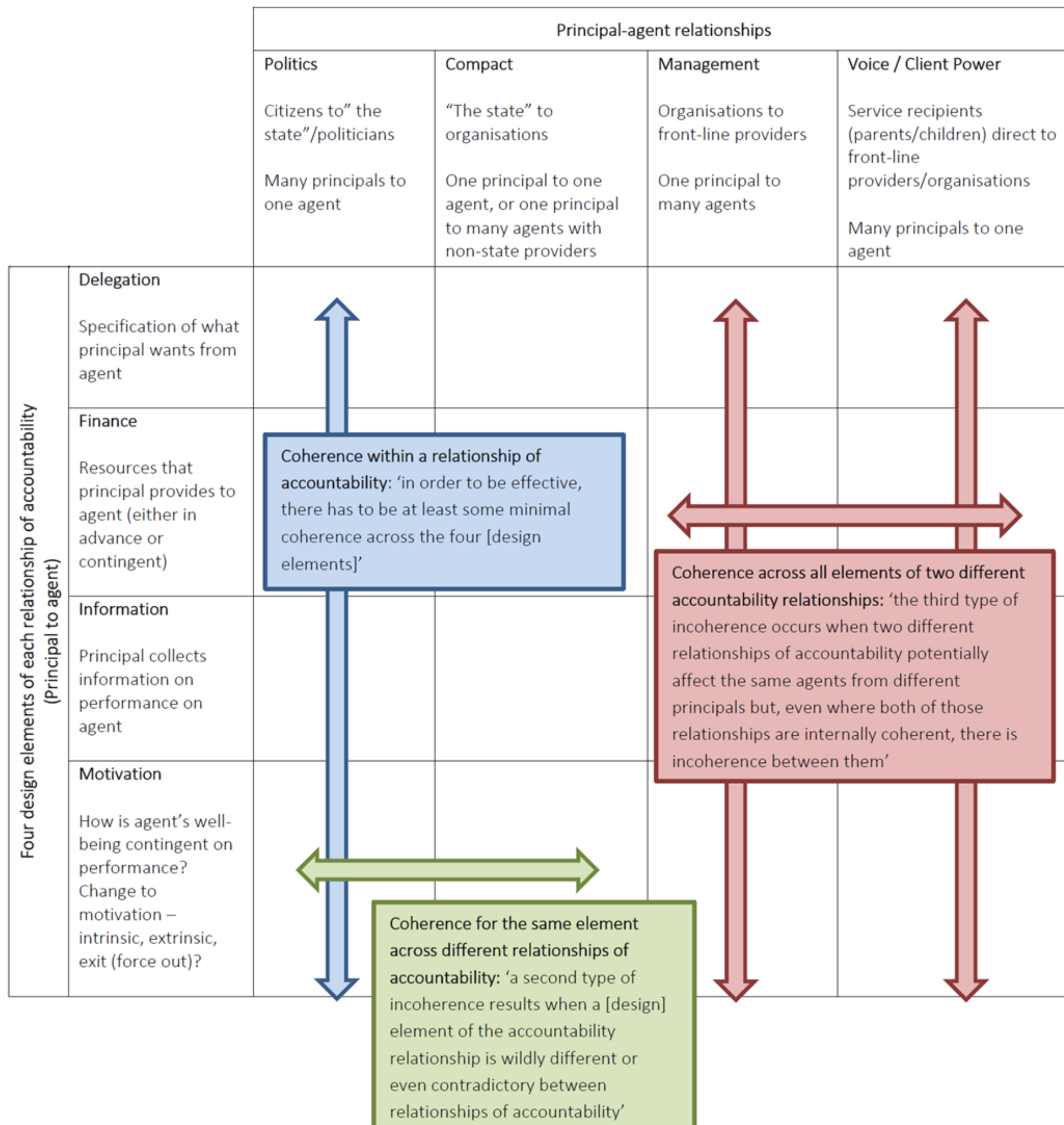
Pritchett (2015) combines these sets of actors and design elements into a four-by-four 'diagnostic for systems of basic education', and proposes that "governmental (sub) systems work when there is an adequate flow of accountability



in the system" (2015:18). Pritchett argues that 'coherence' within, between and across accountability relationships is a key concept for the analysis of education systems – in particular, to consider whether a system is 'coherent for learning', and if not, to identify the nature of incoherence within the system, and how this inhibits the achievement of quality learning outcomes.

Figure 2 provides an annotated version of Pritchett's four-by-four diagnostic, including the three types of in/coherence described by Pritchett that may be identified through a systems approach. In the following section, we consider how we can adapt Pritchett's model of accountability and four-by-four diagnostic to understand in/coherence within the Ethiopian education system.

Figure 2: Annotated four-by-four diagnostic for systems of basic education, and three types of system in/coherence (adapted from Pritchett, 2015:19)



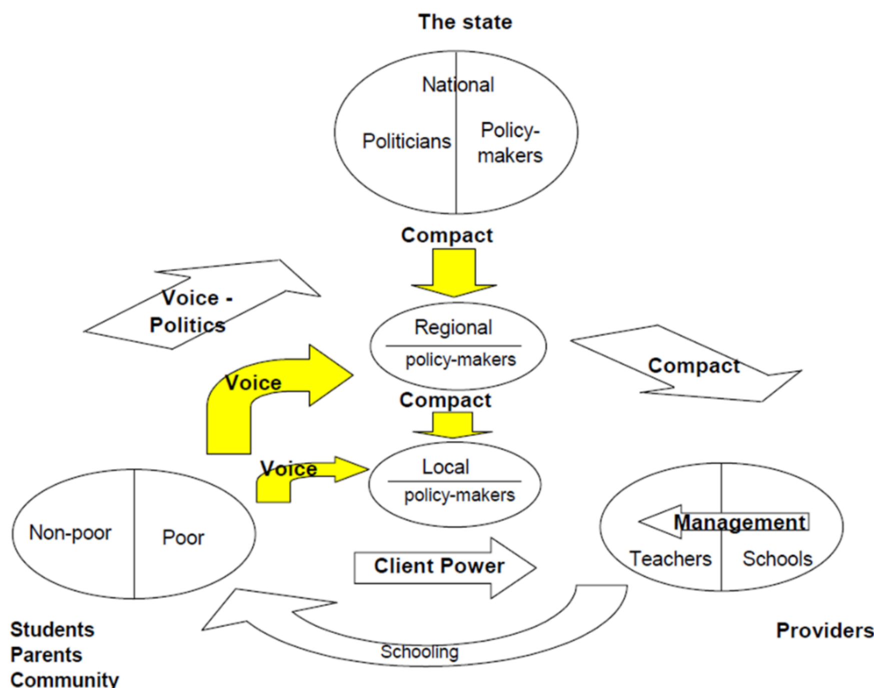
Developing a model of accountability relationships for the Ethiopian education system

While Pritchett's (2015) model provides a useful framework to understand accountability relationships and to analyse in/coherence in an education system, its starting point is from the perspective of a system in which decisions are made at the centre. As the Ethiopian education system is largely decentralised, with the transfer of expenditure and decision-making authority from upper (federal and regional) to lower (woreda) tiers of government, some adaptations are required before Pritchett's model can be applied in such a context. Service providers in the Ethiopian system are strictly accountable to woreda governments for producing results and in turn, the woreda authorities are held accountable by the regional and federal governments for delivering basic services and achieving targets (Khan et al., 2014). Di Gropello's (2004) work on decentralised education systems in Latin America, and in particular, her 'sub-national shared responsibility model' (Figure 3) provides a more suitable model for this structure of accountability

relationships. Di Gropello's model places two different political actors at the centre of the decentralisation process, and distributes the main responsibility for service delivery among them.

This model reflects the way in which the Ethiopian education system was structured following the country's 1994 Education and Training Policy (ETP), and recent early learning reforms (which are the focus of ELP) have been implemented according to this decentralised model. Since the 1994 ETP, regions have in principle been responsible for developing their education plans and for the majority of education spending. By contrast, the GEQIP reforms of interest to RISE have been designed and implemented in a more centralised way, with engagement of key donors in collaboration with the Federal Ministry of Education. The potential mis-match between the intended decentralised structure of the education system and the centralised nature of the GEQIP reforms is a key area of interest within the RISE Ethiopia research. We hope to compare and contrast the implications of this approach with the more decentralised reforms associated with ELP. It is also important to note that there are considerable regional variations in capacity and the extent of decentralisation within the education system (particularly between 'established' and 'emerging' regions) in Ethiopia; the reasons for this variation is also a key area of interest for both RISE and ELP.

Figure 3: A 'sub-national shared responsibility' model of accountability relationships (di Gropello 2004: 5)



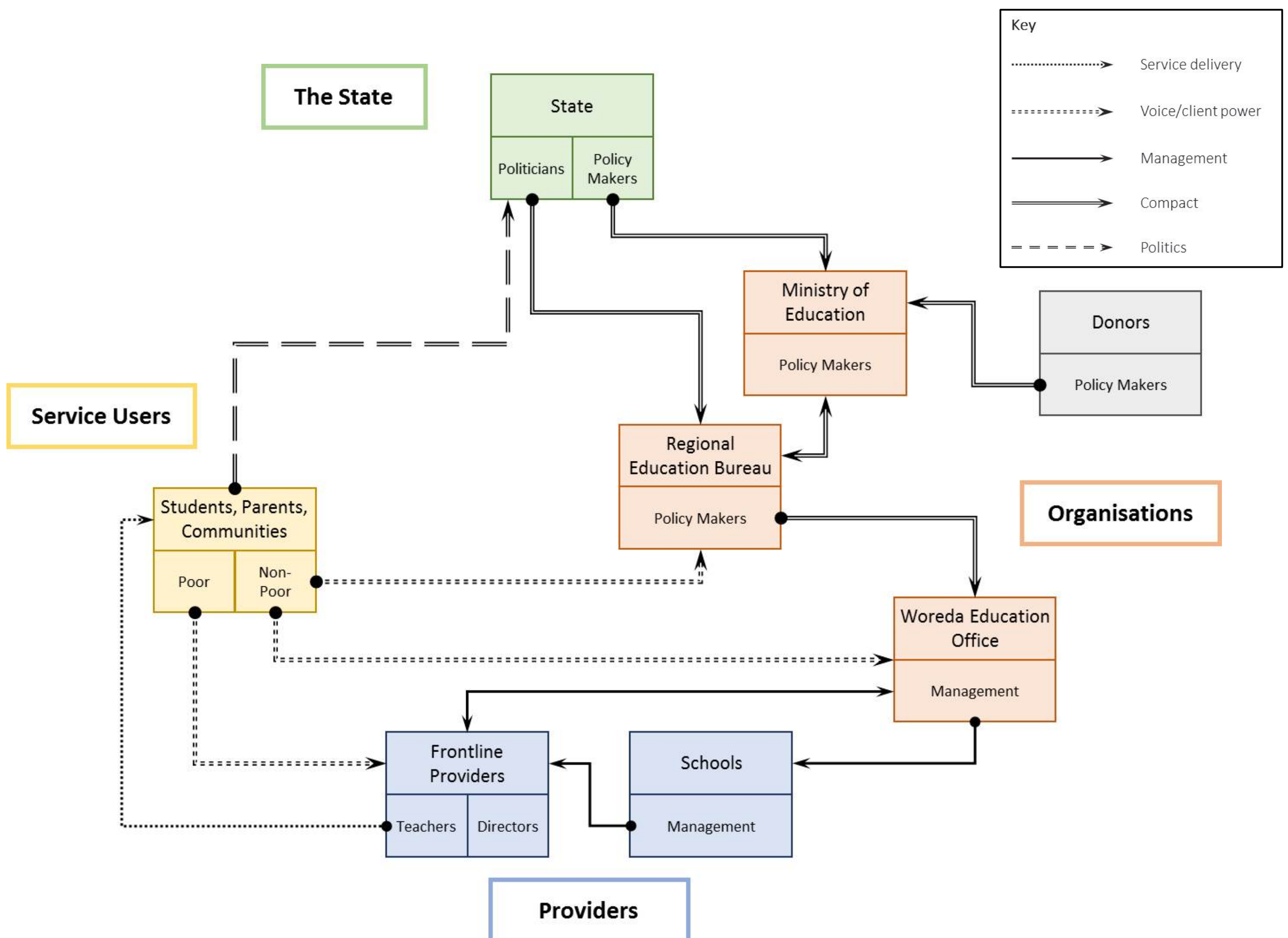
The three levels of government (national/federal, regional, and local/woreda) are organised hierarchically, and are seen as having mostly complementary roles in service delivery. Kebele ('village') councils are also involved in planning for service delivery at the local level, and are a conduit through which the voice of communities is passed upwards to woredas. Similarly, coordination mechanisms such as Parent, Student, and Teacher Associations (PSTAs) influence the flow of information from clients to front line organisations. These actors are implied in our stylised accountability framework with respect to 'Students, Parents, and Communities'. An understanding of their roles, responsibilities, and relationships to education service delivery is a key part of our research, and will be included in our stakeholder interviews at local levels.

Di Gropello's model of sub-national shared responsibilty reflects systems which can take advantage of the skills and specificities at each level and the relationships between them. This model particularly recognises the importance of identifying the implications of 'compact' relationships between the centre and regional level and between regional and local levels, as well as the 'voice' relationship between citizens at the local level and between citizens and the

regional level (di Gropello, 2004). According to di Gropello (2004), the complexities inherent in systems which involve "more than one political sub-national actor in service delivery with complementary functions makes the creation of an effective accountability system particularly difficult" (2004:18). Our aim has therefore been to develop a model of accountability relationships within the Ethiopian system which will allow us to capture some of these complexities.

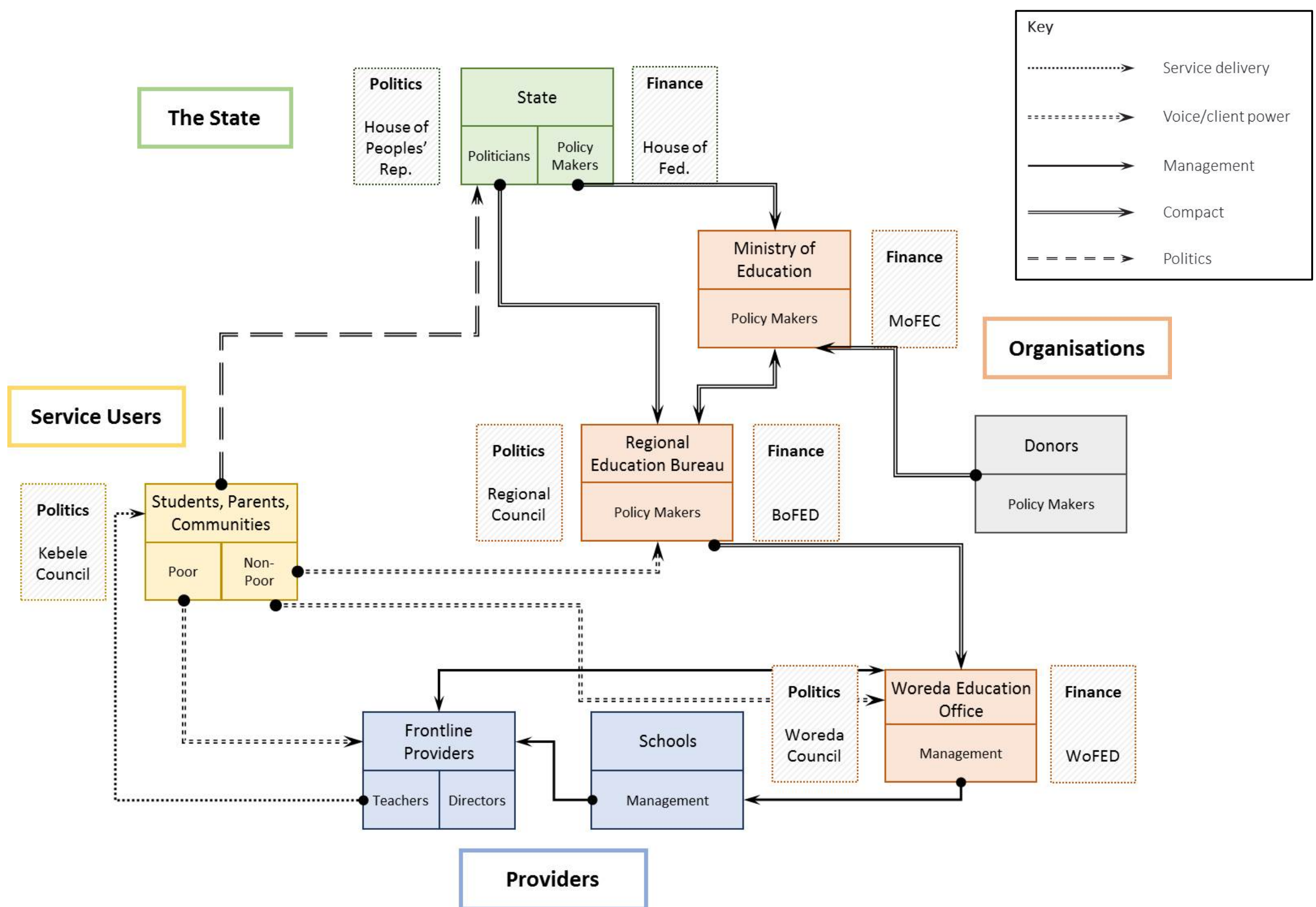
In recognition of the complexity of the different layers of accountability, we have adapted di Gropello's sub-national shared responsibility model to develop a stylised accountability framework for Ethiopia's education system (Figure 4). This includes all the relationships and design elements of Pritchett's model, but re-configures the relationships following di Gropello's decentralised structure, and includes groups of actors which make sense in the Ethiopian context. This also includes adding 'compact' relationships directly from the state to Regional Education Bureaus (REBs), and from REBs to Woreda Education Offices (WEOs); and adding 'voice' relationships from service users to REBs and to WEOs.

Figure 4: A stylised accountability framework for Ethiopia's education system



It should be noted that we have only included one 'sub-system' within the education system in Figure 4 – namely, the education administration. Actor mapping work for RISE and ELP points to three sub-systems in the Ethiopian education system: the education administration, the finance sub-system, and the political sub-system (see Figure 5). Responsibilities for education are divided between these three sub-systems; for example, while the education administration is responsible for policy development, it does not have control over teacher recruitment, nor the local allocation of funds; these activities are covered by the political and financial sub-systems respectively. Additionally, there are 'design elements' (e.g., finance) of accountability relationships in which the education administration is not directly involved. For example, for early learning, the formula used to allocate block grants across regions is decided by the House of Federations and cascaded to regions (the finance sub-system). Further, while allocations from regions to woredas might be based on a similar formula, within-woreda allocations to education are determined locally, by negotiation between the woreda finance office, woreda council, and cabinet (local levels of the finance and political sub-systems respectively). While the funding structure for the GEQIP reforms works slightly differently from early learning reforms (for example, the political sub-system is not as obviously implicated in the implementation of GEQIP), it is again the finance sub-system, rather than the education administration, through which funds are disbursed.

Figure 5: A stylised model of Ethiopia's education system: education, finance and political sub-systems



We have also made an important addition to our stylised accountability framework for Ethiopia's education system by including donors as a key set of actors. Donors are not included as a group of actors in Pritchett's model, nor in di Gropello's approach. However, donors such as the World Bank, DFID, and others have been instrumental in the design and implementation of the GEQIP reforms in Ethiopia over the past 10 years. It is therefore crucial to understand the nature of accountability relationships between donors and other groups of actors, including those at

the federal, regional, woreda, and school levels, in order to understand the nature of in/coherence within the system. We anticipate that NGOs are less directly involved in the design and implementation of national reforms in the same way that donors are in Ethiopia, but rather involved in the delivery of reforms at regional level. As this remains an empirical question (to be explored through further actor mapping and key stakeholder interviews), we do not include NGOs as a separate group in our model at this stage. As discussed in the following section, Kingdon et al.'s (2014) political economy framework provides a useful starting point to consider key actors beyond those identified in the Pritchett and di Gropello models.

The extension of Pritchett's model to reflect accountability relationships within a decentralised system, and to include donors as a key group of actors, also has implications for the four-by-four diagnostic presented in Figure 2. As evident from Figure 6 below, an equivalent diagnostic for our model of the Ethiopian education system is much more complex than Pritchett's original. Firstly, with additional sets of actors (donors) and 'levels' of actors within the system (regional stakeholders; woreda-level stakeholders), the number of accountability relationships grows. Secondly, we have extended the structure to permit one principal (e.g., the state) to hold one type of accountability relationship with multiple agents (e.g., from the state to the Ministry of Education, and from the state to Regional Education Bureaus).

Identifying in/coherence within, between, and across this expanded number of accountability relationships will inevitably be a more complex process than via Pritchett's original four-by-four diagnostic. Illustrating this complexity, we have prepared a version of our adapted matrix annotated with an example of questions that could be explored (see Appendix 1). As discussed in the concluding section, this complexity means that we have to make practical considerations in focusing our approach to systems research in RISE and ELP. Before this, in the following section, we discuss how insights from a political economy approach can add nuance to the ways in which we examine accountability relationships and in/coherence within our adapted framework for the Ethiopian education system.

Figure 6: An adapted system diagnostic for the Ethiopian basic education system

Principal-Agent Relationships

	Politics	Compact				Management	Voice	Client Power
Principal	Citizens	State	Donors	Ministry of Education	Regional Education Bureau	Woreda Education Office	Students, Parents, Communities	Students, Parents, Communities
Agent (1)	State	Ministry of Education	Ministry of Education	Regional Education Bureau	Zonal Education Office*	Directors and Teachers	Woreda Education Office	Directors and Teachers
Agent (2)		Regional Education Bureau			Woreda Education Office		Regional Education Bureau	
Delegation								
Finance								
Information								
Motivation								

** Zonal Education Office is important in some regions (e.g., SNNP, where a zone typically overlaps with a language/ethnic group) but has no role in others.*

Power dynamics and change over time

In their rigorous review of the political economy of education systems in developing countries, Kingdon et al. (2014) argue that:

> *"Education reform does not take place in a vacuum, but under specific constraints and opportunities, many of which are politically driven, shaped by the interests and incentives facing different stakeholders, the direct and indirect pressures exerted by these stakeholders, and by formal and informal institutions. Each of these factors influences different aspects of education reform, whether policy design, financing, implementation or evaluation."*
>
> *(Kingdon et al., 2014:5)*

The 'direct and indirect pressures' described here, as exerted by stakeholders and institutions, can be seen as analogous to Pritchett's accountability relationships between different actors, while the 'interests and incentives' of different stakeholders described by Kingdon et al. can be understood as the 'delegation' and 'motivation' design elements of accountability relationships in Pritchett's framework (see Table 1). Table 1 includes an attempt to align the five themes in Kingdon et al.'s framework (each with a series of sub-questions to guide analysis) with Pritchett's conceptualisation of accountability relationships within education systems. It further indicates the planned methods which RISE and ELP will use to explore these questions.

Kingdon et al.'s description of an education system as a 'value chain' in which "stakeholders both [make] decisions and [operate] at various levels within both national and international environments" also includes what Pritchett might describe as 'incoherence': "there are numerous opportunities along the entire [value] chain for unfavourable leakages and corrupt behaviours to undermine efforts to achieve the ultimate goals: delivery of educational services in an equitable, efficient and effective manner" (Kingdon et al., 2014:5-6).

The synergies between Kingdon et al.'s framework and Pritchett's model of accountability relationships indicate the value of using a political economy approach to examine in/coherence within an education system. Moreover, there are elements of Kingdon et al.'s political economy framework which are not explicitly included in Pritchett's model; incorporating these elements can add nuance to our understanding of the education reforms of interest to RISE and ELP in several ways.

By asking "who are the key stakeholders with an interest in the sector?" (Kingdon et al., 2014:8), we are able to go beyond Pritchett's four defined groups of actors to include international donors and development partners as a key group of actors in the Ethiopian education system, as discussed above. Questions about "direct and indirect mechanisms available to different groups to exercise their power" (Kingdon et al., 2014:8) also encourage us to consider stakeholder relationships not only according to a unidimensional 'principal-agent' structure, but also the multidimensional nature of power dynamics between different actors. For example, rather than understanding the 'delegation' element of a 'compact' accountability relationship exclusively in the terms described by Pritchett – as a "specification of what the principal [i.e., the Ministry of Education] wants from the agent [i.e., a Regional Education Bureau]" (2015:19), a political economy approach would encourage us to consider what these actors might want from each other, the direct and indirect mechanisms by which different (and potentially competing) interests are prioritised, and the eventual implications of these dynamics for in/coherence in the system.

Table 1: Linking Kingdon et al.'s (2014) political economy framework with Pritchett's (2015) education system diagnostic

Kingdon et al (2014) political economy framework		**Relevance to RISE and ELP**	
Theme	*Sub-question*	*Link to Pritchett (2015) framework?*	*Planned methods*
1. Roles and responsibilities	Who are the key stakeholders with an interest in the sector?	-	Actor mapping SABER[3] de jure / de facto analysis
	What are the interests and incentives faced by different players?	'Delegation' and 'motivation' design elements across all four accountability relationships	Stakeholder interviews (federal -> school level)
	Has this varied over time (and space)?	-	Stakeholder interviews (federal -> school level)
2. Rent-seeking and patronage politics	How significant is the extent of rent-seeking and patronage politics in the education sector, and where is it most prevalent?	'Finance' and 'motivation' design elements across all four accountability relationships (to some extent)	Stakeholder interviews (federal -> school level)
	What is the impact of such behaviour on education reform and school outcomes?	Performance of 'agent' outcome of four-by-four diagnostic (to some extent)	To be explored by linking findings from the stakeholder interviews, quantitative findings on learning outcomes and qualitative findings on school and community experiences of reforms
3. Decision-making and the process of influence	Who are all the participants in the decision-making process regarding education policies of different types?	-	Actor mapping SABER de jure / de facto analysis stakeholder interviews (federal -> school level)
	What is the identity of all those who exert pressure on the decision-making process?	'Delegation', 'information', and 'motivation' design elements across all accountability relationships	
	What are the direct and indirect mechanisms available to different groups to exercise their power?	'Finance', 'information', and 'motivation' design elements across all accountability relationships	Stakeholder interviews (federal -> school level)
	What are the implications of this power play for educational outcomes?	'Performance of agent' outcome of four-by-four diagnostic (to some extent)	To be explored by linking findings from stakeholder interviews, quantitative findings on learning outcomes, and qualitative findings on school and community experiences of reforms
4. Implementation issues	To what extent are policy reforms implemented [differentially]?	'Finance' and 'information' design elements across accountability relationships (to some extent)	SABER 'de facto' analysis stakeholder interviews (federal -> school level) Qualitative work at school and community level
	What are the factors that facilitate and impede implementation?	Examining (in)coherence within, between and across elements of accountability	Stakeholder interviews (federal -> school level)
5. Driving forces	What political and economic conditions drive or inhibit education reform, both in its formulation and implementation?	Examining incoherence within, between and across elements of accountability	Stakeholder interviews (federal -> school level)

[3] Using diagnostic tools and policy information, the Systems Approach for Better Education Results (SABER) produces comparative data and knowledge about education system policies and institutions. It evaluates the quality of those education policies against evidence-based global standards, with the aim of helping countries systematically strengthen their education systems. For more information, see: http://saber.worldbank.org/.

It is important to acknowledge here that we will not treat accounts given by key stakeholders as purely 'factual' information during interviews or during analysis. Instead, our understanding of accountability relationships within the education system will consist of potentially competing perspectives (which are themselves influenced by particular motivations and experiences) of different stakeholders. Considering in/consistency between stakeholders' accounts (and the implications of this for our wider research questions) will be a key focus for our analysis. Additionally, certain elements highlighted by Kingdon et al.'s political economy framework – such as corruption, rent-seeking, and patronage – are clearly sensitive topics to discuss within key stakeholder interviews. Careful planning is required to consider whether, how, and with whom these topics are appropriate to be explored during fieldwork. Our proposed approach is not to ask about these issues directly during the interviews.

Finally, Kingdon et al.'s questions about the interests and incentives of different actors – and how these actors, interests, and incentives have varied over time – are particularly useful to guide our interest in change over time within the Ethiopian education system. Pritchett's model supports a cross-sectional understanding of in/coherence within a system, but incorporating Kingdon's approach allows us to consider, for example, if any current in/coherence within the education system can be attributed to conflicting interests and incentives of different actors from the design phase to the implementation phase of education reforms.

Implications for RISE and ELP 'systems research'

This document outlines a conceptual basis for adopting a systems approach in the RISE and ELP projects, which aim to understand the extent to which the Ethiopian education system is coherent for equitable learning. In order to develop a stylised model of accountability relationships in the Ethiopian system, we have adapted Pritchett's (2015) model of accountability relationships and di Gropello's (2004) 'sub-national shared responsibility' model. Additionally, we have drawn on Kingdon et al.'s (2014) political economy framework in order to consider change over time and power dynamics within accountability relationships of interest.

Following the adapted system diagnostic presented in Figure 6, in order to gain a comprehensive understanding of whether the Ethiopian education system is coherent for equitable learning, we would need to examine the four design elements of each of the eight accountability relationships (politics, management, voice, client power, and four different 'levels' of compact relationships) within the decentralised system. However, in practical terms, this would be extremely challenging for both RISE and ELP, and a series of choices must therefore be made. This is particularly important so that we can prioritise areas for attention in order to achieve a key objective of both RISE and ELP – to provide policy makers with actionable information to help guide the delivery of quality, equitable learning at scale. We will not explore all of our specific logistical concerns in detail here, but it may be useful for others adopting a systems approach to be aware of some of the key decisions the Ethiopia research team will be considering:

1. **Sub-systems**. Understanding the accountability relationships within and between the education administration, finance, and political sub-systems is undoubtedly important in order to fully understand coherence within the Ethiopian education system. In both RISE and ELP, while we will first examine linkages between these three sub-systems from the perspective of stakeholders within the education administration (Figure 4), we will need to consider whether and how to engage with the finance and political sub-systems (Figure 5). Although it does not have sole responsibility for GEQIP or early learning reforms, the education administration remains the primary sub-system of interest in order to understand the design and implementation of these reforms, and to understand system in/coherence for equitable learning.

2. **Accountability relationships**. Informed by the literature around decentralisation and our adapted framework for Ethiopia's education system, our key stakeholder interviews will focus on the **compact**, **management**, **voice,** and **client power** accountability relationships. Given responsibilities for design and implementation of the programmes, more attention in the first stage will be given at the national level for RISE (as GEQIP is a federal project) and at the sub-national level for ELP. Given the structure of the Ethiopian system, the **politics**

relationship (from citizens to the state) will initially receive less attention. However, we will identify empirically the extent to which this relationship should be included further; for example, this relationship may be explored in more depth at local levels (i.e., between parents and woreda councils).

3. **Adopting a multi-stage approach to fieldwork.** In light of the exploratory nature of this work, we plan to conduct multiple stages of fieldwork. This seems particularly important since we anticipate that processes affecting the education system will evolve over the period of the research; this is already apparent with the shift from the second to third phase of GEQIP, which has implications both for the emphasis on 'equity' within the system and for 'O'-Class reforms. This staged approach will involve starting at national and regional levels and then progressing to woreda levels at a later stage for both RISE and ELP. Adopting multiple research methods (including actor mapping, policy analysis, and key stakeholder interviews) over several stages of fieldwork will support an iterative approach to data collection and analysis, in which findings from initial stages allow us to refine the focus of later stages of the work.

   This approach also allows us to engage with stakeholders throughout the research process, which has already proved beneficial. At a country engagement event in October 2017, key education stakeholders advised that areas of interest for the RISE research could include both horizontal misalignments in the system (for example between curriculum and assessment reforms) and vertical misalignments (with respect to information and resources flowing from federal to school levels) (Woldehanna and Yorke, 2017). Overall, we anticipate that this multi-stage approach will ultimately lead to a richer and more nuanced understanding of in/coherence around equitable learning in the Ethiopian education system.

There is a growing interest in adopting a systems approach to education research, particularly in order to understand and address the causes of the 'learning crisis' in low and middle-income countries. We hope that these reflections on our approach to adapting existing conceptual frameworks to understand a specific education system, and on moving from conceptual to more practical considerations, will be of help to others conducting systems research. In turn, it is hoped that adopting a systems approach will ultimately enable education systems to effectively provide equitable, quality learning outcomes for all.

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Appendix 1: An adapted system diagnostic for the Ethiopian basic education system, annotated with example questions for RISE and ELP

Principal-Agent Relationships

	Politics	Compact				Management	Voice	Client Power
Principal	Citizens	State	Donors	Ministry of Education	Regional Education Bureau	Woreda Education Office	Students, Parents, Communities	Students, Parents, Communities
Agent (1)	State	Ministry of Education	Ministry of Education	Regional Education Bureau	Zonal Education Office*	Directors and Teachers	Woreda Education Office	Directors and Teachers
Agent (2)		Regional Education Bureau			Woreda Education Office		Regional Education Bureau	
Delegation			*What do donors require of the MoE in terms of GEQIP / early learning reforms, particularly for population target groups in GEQIP-E/ ELP?* *What are Ministry understandings of and attitudes towards these requirements?*	*What does the Ministry of Education require of REBs in terms of GEQIP / early learning reforms, particularly for population target groups in GEQIP-E/ ELP?* *What are REB understandings of and attitudes towards these requirements?*	*What do REBs require of WEOs in terms of GEQIP / early learning reforms? How does this vary across regions, particularly for population target groups in GEQIP-E/ELP?* *What are WEOs understandings of and attitudes towards these requirements?*	*What do WEOs require of schools in terms of GEQIP / early learning reforms? How does this vary across woredas, particularly for population target groups in GEQIP-E/ELP?* *What are directors' and teachers' understandings of and attitudes towards these requirements?*	*To what extent do communities and parents feel able to communicate their 'specifications' for education quality to WEOs and/or REBs, and in what ways does this include their engagement of identification of vulnerable groups in their communities? Do they do this? How does this vary across woredas and regions?*	*To what extent do communities and parents feel able to communicate their 'specifications' for education quality to schools, and in what ways does this include their engagement of identification of vulnerable groups in their communities? Do they do this? How does this vary across woredas and regions?*
Finance			*What are the actual and intended budget flows from donors to the MoE/ MoFEC? In what ways does this address issues of equity (e.g., in the design of formula funding)?* *Is the magnitude of finance (both intended and actual) considered to be sufficient to meet delegated objectives?*	*What are the actual and intended budget flows from MoE/MoFEC to the REBs/BoFEDs? How does this vary across regions? In what ways does this address issues of equity (e.g., in the design of formula funding)?* *Is the magnitude of finance (both intended and actual) considered to be sufficient to meet delegated objectives?*	*What are the actual and intended budget flows from REBs/BoFEDs to the WEOs/WoFEDs? How does this vary across regions and woredas? In what ways does this address issues of equity (e.g., in the design of formula funding)?* *Is the magnitude of finance (both intended and actual) considered to be sufficient to meet delegated objectives?*	*Is the magnitude of finance (both intended and actual) from woredas to schools considered to be sufficient to meet 'delegated' objectives? In what ways does this address issues of equity (e.g., in the design of formula funding)?* *How well and regularly are teachers paid? How does this relate to what they are expected to achieve?*		*What (formal / informal) resources do communities and parents provide to schools and teachers? In what ways does this affect equity in resource flows?* *How does the provision of these resources relate to delegated objectives?*

Principal-Agent Relationships

	Politics	Compact				Management	Voice	Client Power
Principal	Citizens	State	Donors	Ministry of Education	Regional Education Bureau	Woreda Education Office	Students, Parents, Communities	Students, Parents, Communities
Agent (1)	State	Ministry of Education	Ministry of Education	Regional Education Bureau	Zonal Education Office*	Directors and Teachers	Woreda Education Office	Directors and Teachers
Agent (2)		Regional Education Bureau			Woreda Education Office		Regional Education Bureau	
Information			Do donors collect information from the MoE on extent to which delegated objectives are being achieved with respect to learning, particularly for GEQIP-E population target groups? (intended/actual) How formal/informal is this information, and how / to what extent is it acted upon?	Does the MoE collect information from REBs on extent to which delegated objectives are being achieved with respect to learning, particularly for GEQIP-E population target groups? (intended/actual) How formal/informal is this information, and how / to what extent is it acted upon?	Do REBs collect information from WEOs on extent to which delegated objectives are being achieved with respect to learning, particularly for GEQIP-E population target groups? (intended/actual) How formal/informal is this information, and how / to what extent is it acted upon?	Do WEOs collect information from schools on extent to which delegated objectives are being achieved with respect to learning, particularly for GEQIP-E population target groups? (intended/actual) How formal/informal is this information, and how / to what extent is it acted upon?	Do communities and parents have access to information on WEO and/or REB education planning and budgets? How does this vary across schools and communities, and why?	Based on their experiences of schooling, do parents and students feel that delegated objectives are being achieved? Beyond their own direct experiences, what kinds of information can communities, parents and students access on the extent to which delegated objectives are being achieved?
Motivation			What are the formal / informal incentives for donors and the MoE to ensure that delegated objectives are met? To what extent are the incentives of donors and actors within the MoE intrinsic or extrinsic?	What are the formal / informal incentives for the REBs to ensure that delegated objectives are met? To what extent are the incentives of actors within the ReBs intrinsic or extrinsic?	What are the formal / informal incentives for WEOs to ensure that delegated objectives are met? To what extent are the incentives of actors within the WEOs intrinsic or extrinsic?	What are the formal / informal incentives for school directors and teachers to ensure that delegated objectives are met? To what extent are the incentives of school directors and teachers intrinsic or extrinsic?	To what extent are WEOs and REBs motivated by the interests of students, parents and communities? Do parents and communities feel that existing incentives for WEOs and REBs are sufficient? If not, what kinds of incentives would they prefer?	To what extent are schools motivated by the interests of students, parents and communities? Do parents and communities feel that existing incentives for schools are sufficient? If not, what kinds of incentives would they prefer?

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