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Decentralization for High-Quality Education: Elements and Issues of Design

F. Henry Healey III and Luis Crouch

Abstract

The impact of education decentralization on high-quality education has been mixed at best. This can be attributed to a variety of factors including decentralization itself, ineffectual implementation, political-economic friction, and poor design. This paper focuses largely on the issue of design, contending that if governments or donors aim to decentralize education systems, or parts thereof, for the purpose of high-quality education, the system must be designed to do so. Only then might there be some chance of it actually happening. In this paper we put forth a methodology for designing a high-quality decentralized education system and discuss the ways in which that design can be used to support the planning process aimed at bringing about the design.

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Introduction

With much of the education access problem sufficiently addressed in the developing world, respective governments are now striving, or being called to strive, for greater education quality. Among the multiple avenues open for some of these countries to achieve this goal, one is decentralization. The rationale behind this particular line of thinking is that a more decentralized education system can help to improve overall service delivery, customer satisfaction, citizen participation and democratization, and accountability—*and with all that*, the belief is that decentralization can help to improve the overall quality of education. But for decentralization to have this ultimate impact, we maintain that these governments need to understand what a high-quality decentralized education system looks like.

We say this because the process of transforming a centralized education system to one that is more decentralized is enormously complex. Functions once carried out by more centrally located jurisdictions have to move downwards; organizational structures need to be eliminated, rearranged, or created; institutional relationships have to be dissolved and reconstituted elsewhere in the system; the legal framework has to accommodate all of these changes; new job descriptions have to be drafted; etc. Moreover, all these changes have to add up to a coherent, efficient, and high-quality education system. Unless key actors throughout the system go through the arduous process of designing such a system, the complexity inherent to the overall process of decentralization can be easily overlooked, and the resulting effort will be lacking.

This is not to say that a detailed design of the sort we describe in this paper is a *must* if a country wants to decentralize for high-quality education. Some countries have successfully decentralized without any evidence of using such a detailed design, and their resultant education systems appear to be producing good results (e.g., Czech Republic, Hungary, as per 2007 TIMSS scores). We posit, however, that because these decentralized education systems are performing well, they had to have been the product of a lot of very clear thinking about what a high-quality decentralized education systems looks like, which is exactly what the design process described in this paper is meant to facilitate.

For us, a detailed design is a depiction of what high-quality decentralized education system might look like in, say, 10–15 years' time. Specifically, it is a coherent and logical delineation of allocated functions, sub-functions, roles, responsibilities, institutional relationships, and decision-making authorities, throughout various levels and among myriad actors of the system-to-be. That we promote the use of such a design does not imply that one size fits all, nor does it connote that one has to decentralize in a wholesale way (i.e., dealing with all possible functions with full technical coherence all at once) in order for a decentralization effort to be effective or even somewhat effective. Neither does it mean that one cannot proceed incrementally and in a contingency-based, experiment-oriented manner. One is not looking for perfection, just for valid and feasible improvements on current situations. It does suggest, however, that if a country wants to improve educational quality by decentralizing its education system (or parts thereof), then some fundamental principles have to be followed in the development of a design so as to avoid incoherence, which leads to frustrations and setbacks, especially if countries want to improve the efficacy of their system with regard to both quality and customer satisfaction.

This paper's narrow focus on design is intentional. It does not delve much into the rationale for decentralization partly because so much has already been written on the topic, partly because we have little to add to this body of knowledge, and partly because we feel it would be a distraction. Nor does this paper dwell much on the political economy of education decentralization and the ways and means of dealing with it. Again, much has already been written on this subject, some of it by us (Crouch & Healey, 1996; Crouch, Healey, & Destafano, 1996(a); Crouch, Healey, & Destafano, 1996(b); Healey & Crouch, 1996; Healey & Destafano, 1997; Destefano & Crouch, 2006). To dwell on these issues here would be, we believe, another distraction. Nevertheless, these and other decentralization-related issues are brought into the discussion on design when we feel it is important to do so. Finally, while education decentralization has

unfolded in countless countries, we focus quite a bit on the Egyptian experience. We do this because it was in Egypt where the overall approach described in this paper was developed and utilized.

That we chose to limit our focus is not meant to trivialize how complex education decentralization can be. When one considers the various reasons behind education decentralization, the political economy around each and every reform that decentralization requires, the fact that key aspects of education decentralization require and are influenced by larger governmental decentralization initiatives, and the various options open to design, one comes to realize that it can be an enormously complex undertaking. This being the case, we feel that by narrowly focusing on design we can bring an element of clarity that can help people to better deal with this complexity.

Literature Review

The literature on decentralization is vast. Much of it focuses on the conceptual aspects of decentralization, defining and differentiating terms that connote different kinds or degrees of decentralization (Rondinelli, 1981; Rondinelli, Nellis, & Cheema; 1983; Winkler, 1989, 2005; Weiler, 1990; Welsh & McGinn, 1999; Winkler & Gershberg, 2003; Shah & Thompson 2004; Kim, 2008; Edwards, 2010); the reasons why governments decentralize (Winkler, 1989, 2005; Weiler, 1990; Welsh & McGinn; Naidoo, 2002; Cohen, 2004); the extent to which countries have decentralized (Winkler, 1989; Welsh & McGinn; Winkler & Gershberg); and country-specific or cross-national comparative case studies or accounts of various efforts to decentralize (Parry, 1997; Levitas & Herczynski, 2001; World Bank, 2004; Navarro, 2007). There is as well a vast body of literature on the political economy of decentralization (Angell, Lowden, & Thorp, 2001; Kaufman & Nelson, 2004; and Stein, Tomassi, Echebarría, Lora, & Payne, 2006).

What many analytical studies have revealed over the course of time is that decentralization's impact on a variety of desired outcomes is mixed, with some showing that decentralization helped to bring about the desired objectives of the effort (Galiani & Schargrodsky, 2001; Faguet, 2004), some showing that decentralization had no impact at all on the desired outcomes (Behrman, Deolalokar, & Soon, 2002; Pritchett & Pande 2006), and some showing a mix of the two (King & Ozler, 1998; Gunnarsson, Orazem, Sanchez, & Verdisco, 2004; Ahmad, Devarajan, Khemani, & Shah, 2005; De Grauwe et al., 2005; Ekpo, 2007; Winkler & Yeo, 2007; Ahmad & Brosio, 2009).

Education decentralization's mixed results can be attributed to a number of factors. First and foremost, mixed results are to be expected, even in the most well-designed and well-implemented of decentralization efforts. Against the backdrop of non-identical people, schools, communities, and districts, one will inevitably get mixed results. Imagine a highly decentralized education system wherein there is a considerable amount of horizontal accountability and schools are free to pursue high-quality education to meet the needs and wants expressed by the community to the local school board. Imagine a wide spectrum of school principals, teachers, and staff developing and implementing school improvement plans aimed at addressing some of those varying needs and wants. Finally, imagine schools as learning organizations, each one encouraged to come up with innovative ways of improving the overall teaching and learning situation. There will be varying degrees of success and failures—or mixed results.

But apart from what one can naturally expect from a well-designed and well-implemented decentralization effort, mixed results can be the product of a number of technical deficiencies. Winkler and Gershberg (2003), Shah and Thompson (2004), Sharma (2005), and Ekpo (2007) all note *incomplete decentralization* as a major cause of decentralization's reported shortcomings. Incomplete decentralization describes a situation where some of the key functions needed for a particular level of the system to carry out a certain responsibility have not been devolved to that level of the system. As a result, the actors at that level are not able to do what they have been given to do.

By way of example, when the money and the spending authority (e.g., procurement) needed to carry out a certain function are not also devolved to that same level of the system, it becomes very difficult for anyone to carry out that function. In some cases this could reflect the fact that the political will behind

decentralization is weak. In other cases it could reflect the fact that political-economic roadblocks surfaced that were not sufficiently anticipated, so there was no effective plan to overcome them. In a few cases, in spite of an effective plan, the forces that line up against decentralization may simply prove to be too hard to overcome. Since it is not always possible to anticipate the *strength* of opposing forces in advance, it would be unfair to say that a plan that could not overcome such strong opposition was a bad plan. That is, sometimes there truly are intractable implementation problems, not just problems of insufficient design and insufficient anticipation of opposition.

Another factor contributing to decentralization's mixed track record is a lack of clarity regarding the roles and responsibilities that have been decentralized (di Gropello, 2004; Winkler & Gershberg, 2003; Shah & Thompson, 2004). This lack of clarity occurs when roles and responsibilities are either shared between two or more actors or poorly defined. As Pritchett & Pande (2006) observe, functions must be "mutually exclusive and collectively exhaustive" (p. 23).

When accountability relationships have not been meticulously delineated or realized, decentralization will almost certainly fall short of its intended goals. Litvack, Ahmad, and Bird (1998), Winkler and Gershberg (2003), di Gropello (2004), Shah and Thompson (2004), Sharma (2005), and Ekpo (2007) all note that holding lower-level actors accountable for results is a critical aspect of successful decentralization. But to hold people accountable for results, one needs reliable and transparent information flows (Winkler & Gershberg; di Gropello; Sharma). One also needs the structures that can facilitate regular interjurisdictional dialogue (Ekpo).[1] It also helps to have honest elections and civic participation (di Gropello; Shah & Thompson; World Bank, 2004; Edwards, 2010).

Also attributed to decentralization's mixed performance is the fact that higher levels of the system have failed to restructure themselves to play the entirely new roles that decentralization leaves them (Winkler & Gershberg, 2003). In a decentralized situation, much of the work that the center did is instead in the hands of lower-level actors, so central-level actors assume new roles such as standard setting, decentralization support, monitoring and evaluation (M&E), etc. These roles need to be coherently designed. In addition, personnel issues can impede progress here, since redesign might imply downsizing at the center or asking central staff to do functions that they feel uncomfortable doing or that appear to carry less stature of various sorts.

What all of this is primarily pointing to is the need for good design (Sharma, 2005; Ekpo, 2007; Winkler & Yeo, 2007), or a comprehensive vision of what a learning-centered decentralized education system looks like (Healey, 1997; Shah & Thompson, 2004; Sharma). While the literature is replete with descriptions of various measures needed to improve the overall performance of decentralization—see Litvac et al. (1998); Winkler and Gershberg (2003); di Gropello (2004); Shah and Thompson (2004); Sharma; Pritchett and Pande (2006); Ekpo; and Edwards (2010)—it is quite sparse on how to design a decentralized education system that can help improve overall education quality.[2]

Good design is fundamentally about the proper allocation of detailed functions across the various levels of the system. When sound principles and rational thinking are not applied to the allocation of functions, when the function allocation process is not detailed enough, when it is not comprehensive enough, and when functions are not assigned to particular actors at each level of the system, the ensuing process of decentralization becomes haphazard and as such cannot yield good results.

"A Child/Learning-Centered Approach to Education Systems Design: Implications for Education Reform and School Autonomy" (Healey, 1997) describes an overall approach for creating a learning-centered

[1] An excellent example of these interjurisdictional structures is the 10x10 meetings that take place in South Africa. These regularly scheduled meetings allow the director of the Department of National Education to meet with his nine provincial counterparts to discuss various national objectives as well as the level of need within each province.

[2] While a good design is essential, it cannot guarantee success because the strength of implementation problems is sometimes impossible to anticipate. Thus, bad design can guarantee failure, but good design cannot guarantee success: design is a necessary but not sufficient condition for success.

vision of a decentralized education system, and while it underscores the need to devolve those functions that support child-centered learning to the classroom/school level, it does not discuss the ways and means of detailed function allocation. Welsh and McGinn (1999) do not so much discuss how to design a high-quality decentralized education system as search for an idealized model that could be used by development practitioners. In particular, they describe different categories of decisions under the major headings of governance, school organization, finance, training, curriculum, monitoring, and research and then go on to show where these decisions are made—at the central level, region level, district level, or local level—across a number of different countries that have fairly effective education systems. Upon analyzing this information, they conclude that no "best practice" pattern (or design) could be discerned, which leads them to conclude that a

> strategic approach [to decentralization] is to be preferred over a "best practices" approach. The number of effective combinations of decisions is large; there are many ways to improve education. Consequently, decision makers and managers do not have to maintain a single approach over time, but instead can vary where decisions are made according to the current situation of the organization. A strategic approach would define the principles that guide choices in situations rather than specify the strict structural changes to be made. (Welsh & McGinn (1999, p. 58)

They do not discuss how to use the principles to come up with a viable design; nor does Navarro (2007), who states that a number of the design principles put forth in *this* paper were in effect in a number of the decentralization initiatives that unfolded in Latin America.

Pritchett and Pande (2006), on the other hand, offer an approach for developing a fairly detailed design that can help produce effective schooling. Their approach comprises four major steps: (1) unbundle the major domains of education (i.e., curriculum, testing, professional development) into a comprehensive list of their constituent functions and sub-functions, (2) unbundle jurisdictions such that one can look at the size of various catchment areas and calculate the cost of carrying out various functions; (3) employ sound principles of public finance and accountability when assigning functions to certain levels (i.e., economies of scale, equity, heterogeneity of demand, scope of the externality/market failure/public good); and (4) look at the status quo to compare where the education system is now to what they call the optimal design. If, as we maintain, function allocation is the core step in crafting a design of a decentralized education system, then unbundling domains into the constituent functions and sub-function is a must. As for unbundling jurisdictions into catchment areas delineated by population or enrollment figures and subsequent cost calculations for carrying out various functions, we find this to be an overly complicated exercise and one that is not explained well by the authors.

Our experiences in the realm of scale-up and reform support have led us to believe that reform must be demand-driven and that one of the best ways to generate widespread demand is to engender widespread ownership of the reform (Crouch & Healey, 1996; Crouch, Healey, & DeStefano, 1996a; Crouch, Healey, & DeStefano, 1996b; Healey & Crouch, 1996). Accordingly, the design should be crafted by as many stakeholders as possible, albeit with the clear leadership of core visionaries who can broker, negotiate, interpret, and craft compromises against a backdrop of an extremely solid *technical* vision. Because many stakeholders throughout the system should be involved in the design process, the approach to crafting the design must be as simple as possible: stakeholders must be able to understand what they are doing and how the design comes about. This is not to say that the cost implications of the design that are called for by Pritchett and Pande (2006) need not be calculated; they must, but only after the function allocation table is developed. Only then can one begin to calculate the cost of carrying out each function, calculate the overall cost, and assess the tradeoffs that may have to be made to keep overall costs within budget.

That function allocation should be driven by sound principles is critical. However, Pritchett and Pande (2006) describe only four, together with the principle of subsidiarity. Kim (2008) also only offers four criteria for determining where functions should

be located when thinking about decentralization: economies of scale, spill-overs, heterogeneity of preferences and circumstances, and competition. We believe these are too few—there are multiple reasons why certain functions should be located more centrally and others located more locally. Once stakeholders understand these reasons, one can get the broad social consensus needed for the design to be widely owned (Shah & Thompson, 2004).

Where this paper adds to the existing literature is as follows. First, we offer a comprehensive list of reasons why certain functions should be more or less centrally located. Second, we offer an approach to the function allocation process that focuses on the characteristics of effective schools—an approach that has the strong potential to yield a high-quality decentralized education system. Third, we walk the reader step-by-step through a process of allocating functions to various levels of the system with commentary on the reasons why those functions should be allocated where they are. Fourth, we discuss the ways such a design can be developed that helps to engender the widespread ownership and demand needed to help ensure its realization over time. Finally, we discuss how the design can be used to help support the overall planning and implementation process.

Designing a High-Quality Decentralized Education System

We have made the claim that if decentralization is to help actualize a high-quality education system it must at the very least be designed to do so.[3] In this section, we focus on how to create such a design. Specifically, we discuss a number of design principles, an overall approach for developing the design, and the actual process of allocating certain functions to various levels of the system, drawing on a draft design that was developed in Egypt.

Basic Design Principles

The first and most basic design principle is the principle of subsidiarity, which states that higher levels of the system should play a *subsidiary* role to lower levels of the system—that higher levels of the system should only do what makes little rational sense for lower levels of the system to do.[4] Since the school/community is the lowest level of the education system, the principle of subsidiarity maintains that all functions that the school/community rationally ought to do should be assigned to that level.[5] Those functions for which it makes little rational sense for them to do should then be assigned to the next level up: the district. In turn, those remaining functions for which it makes little rational sense for the district to do should be assigned to the province, and those functions for which it makes little rational sense for the province to do should then be assigned to the center.

Evident in this discussion are some additional design principles. One is that design is primarily about allocating functions, in particular, detailed functions. Broadly defined functions such as "teacher management" contain multiple sub-functions such as hiring teachers, designing teacher career ladders, establishing staffing norms, transferring teachers, etc., which themselves need to be allocated to various levels (and actors) of the system. Moreover, these detailed functions need to be clearly defined, distinct, and assigned to one actor; in all but a few cases, no two different actors should be assigned the same exact function, role, or responsibility, as this would lead to confusion and political-economic tension. Nor should there be functions that are not clearly assigned to *someone*.

[3] Throughout this paper we speak of the design of a decentralized education system, but the principles put forth here apply as well to decentralized *parts of an education system*—one need not design an entire decentralized education system if all one wants to do is decentralize, say, textbook production. That said, having an understanding of what the decentralized education system might look like in the country within which the smaller effort will unfold will offer insights into how the subsystem should ideally fit in the larger picture, and so will reveal potential elements of incoherence and impossibility.

[4] Stating that one should decentralize because the principle of subsidiarity states that higher levels of government should play a subsidiary role to lower levels of government may be seen as akin to saying that one should decentralize because one should decentralize. But what the principle of subsidiarity is really saying is "that individuals have a right to participate in decisions that directly affect them, in accord with their dignity and with their responsibility to the common good. Decisions should be made at the most appropriate level in a society or organization, that is, one should not withdraw those decisions or choices that *rightly* belong to individuals or smaller groups and assign them to a higher authority. However, a higher authority properly intervenes in decisions when necessary to secure or protect the needs and rights of all" (Ascension Health, 2012).

[5] Because there are very good reasons for locating certain functions at lower levels of the system, we say that all functions that the school/community rationally *ought* to do should be assigned to that level.

Reasons Why Certain Functions Should Be More Centrally or Locally Located

There are very good reasons for locating certain functions at different levels of the system. Here we discuss what we believe are the major ones. The presence of economies of scale suggests that certain functions (i.e., purchasing some goods and services, developing examination and assessment systems, doing research of certain types, developing basic curricula) should be located more centrally, while customer satisfaction and speed of transaction (i.e., ensuring that schools get what they really need, when they actually need it, not what the center thinks they need) suggest that certain functions (i.e., purchasing most goods and services, making judgments as to the quality of providers) should be located more locally. So, not only are there reasons for locating certain functions more centrally and others for locating certain functions more locally, but those reasons can, on the surface, clash.

Take, for example, the function "purchasing goods and services." There are benefits to be gained by economies of scale, and there are benefits to be gained by speed of transaction and customer satisfaction. The former would locate the function more centrally; the latter two would locate the function more locally. When one weighs the benefits to be gained by economies of scale against the benefits to be gained from speed of transaction and customer satisfaction, it may make sense that *some* goods and services should be purchased by the school (those where speed of transaction and fine assessment of customer satisfaction outweigh economies of scale), while others (the obverse case) may best be acquired by the center, while still others could be purchased by a "compromise" jurisdiction somewhere in between, such as the district. (This is a good reason to further subdivide the function "purchasing goods and services" into more detailed subfunctions that specify the exact genre of goods and services to be purchased.)[6]

The need to correct for interjurisdictional spillovers suggests that certain functions should be more centrally located. The funding and administration of technical schools in Egypt is a good example. Because not every district in Egypt has a technical school, if the funding and administration of technical schools were devolved to the district level, children wanting to go to technical schools in districts that do not have them would naturally *spill over* to those districts that do have technical schools. But if the host district did not get money to cover some of the costs of those spillover students, it would likely prevent those students from attending—thus the need to fund and manage technical schools more centrally (i.e., at the level of the province).[7]

The need for a national marketplace for teachers (which, in turn, may help create options for both teachers and localities and may help reduce localized sectarianism and strife between localities) would point to the center's developing a career ladder for teachers, along with the specific performance standards needed to scale that ladder. It would also suggest that the center define teacher allocation principles and promote national mobility of teachers. There is also a need for a national marketplace for school graduates; accordingly, those functions that ensure that primary, middle, and secondary school graduates all have the same core competencies should all be more centrally located.

Subtlety of localized information would suggest that the principal of the school and the parents associated with the school, who know the teachers best (this knowledge being the product of localized information about the teachers), should weigh in heavily on which specific teachers should actually get hired or promoted, but according to national criteria that encourage a national (and thus efficient as well as sectarianism-reducing) labor market. Table 1 offers a summary account of these and other key reasons.

[6] It is also possible to separate decision-making about what to buy from the purchasing function. It could be that while some purchases need to be made centrally for reasons of economies of scale, the decision as to what to buy can be made locally and local orders then simply aggregated by a higher level. This, however, requires very sophisticated procurement and delivery systems.

[7] Another solution, such as allowing cross-border billing, would be more complex than seems worthwhile.

Table 1. Reasons for locating certain functions centrally or locally

Reasons	Explanation
	Locate More Centrally
Economies of Scale	Bulk purchases can lead to lower unit costs; therefore, some purchases might best be made more centrally in an attempt to reap these savings. Curriculum design and development, for example, can be extremely expensive; therefore, economies of scale can be acquired by the development of a national curriculum. The same would hold true for certain testing instruments.
National Goals	Various learning objectives and performance standards should be developed more centrally (nationally) to ensure that successful school leavers (primary, middle, secondary) are all educated to the same degree. This would also argue for a national curriculum and some national examinations.
National Markets	Successful school graduates need to have the same basic knowledge base such that employers know what to expect in the way of basic skills. This is particularly important for secondary school leavers. A country benefits greatly from having a national marketplace for teachers where teacher qualifications mean the same thing nationwide and where salaries more or less match by qualification level. This allows teachers to work at any school in the country.
Jurisdictional Spillovers	Families who move from one jurisdiction (i.e., district or province) of the country to another need to be assured that their children can easily enroll in a new school and be able to continue with the education they were getting in the old school. Similarly, regions that do not benefit from schooling their youth, because schooled youth migrate out, may need to be encouraged or required to educate them nonetheless, with either mandates or subsidies or both. Because, for example, there are few blind people in a country, it does not make sense to have a full-service school for the blind in every district. And so, a school for the blind may have to be nationally established and run by the center or at least provinces. The point here is that if a school for the blind were established in a district and the operational costs of that school came out of the district's overall educational resources, blind students from other districts (jurisdictions) might be prevented from attending the school because the district in which the school is located would not want to pay for the education of blind children from another district. Every district would then have an incentive to have such a specialized school, which would be inefficient.
	Locate More Locally
Customer Satisfaction	While economies of scale would claim that certain items should be purchased more centrally, schools may not want or need the items that the center buys. Allowing schools to buy what they want and need increases customer satisfaction and overall effectiveness. Though schools or communities may be able to order what they need from a centralized procurement system, such systems, in order to achieve real economies of scale, tend to over standardize what can be ordered. Note that economies of scale can also be realized by schools' creating "buying clubs." Economies of scale do not always require centralized purchases.
Speed of Transaction	While economies of scale may lower the unit cost of certain items, the savings may be for naught if the items purchased arrive at the school months late. Many items purchased by the school can be purchased on the very day they are needed or within a week or so if the school is distant from an urban area where supplies can be purchased.
Subtle Forms of Information	Certain information can only be acquired and reacted upon at the local level. Principals should be able to hire the teachers they want because during an interview with the potential candidate, the principal can get a feel for the kind of person that potential teacher is, how that person might fit into the staff, etc.
Characteristics of Effective Schools	Those functions that help to manifest the characteristics of effective schools should be located at the school level such that those characteristics can be manifest and so help to ensure that the school is effective.

The Unique Role of the Characteristics of Effective Schools

We would now like to discuss the characteristics of effective schools as both a reason for locating certain functions more locally (e.g., at the school level) and a fundamental design principle.[8] If the functions needed for all the characteristics of effective schools to be realized were allocated to all schools, they would have a fairly good chance of exhibiting those characteristics and becoming effective schools. This is why the characteristics of effective schools (see text box) support locating certain functions more locally.

Take the effective school characteristic *authority over budget and personnel* (see text box).[9] If certain functions (e.g., freedom to use government finances in whatever way the school saw fit in order to support high-quality teaching and learning, developing school improvement plans and budgets) that help actualize this particular characteristic of an effective school were devolved to the schools, that characteristic would in all likelihood be realized.

Characteristics of Effective Schools

- Focus on continuous improvement through ongoing schoolwide professional development in both curriculum and instruction and management skills
- Develop ways to reward staff behavior that help achieve performance objectives and that sanction those who do not meet the goals
- Create a well-developed system for sharing school-related information with a broad range of constituents
- Have authority over budget and personnel
- Establish teacher-led decision making teams and professional culture
- Are led by principals who can facilitate and manage change
- Use higher-level goals, standards, and benchmarks to focus reform efforts on changing curriculum and instruction

As a design principle, the characteristics of effective schools can, when combined with the principle of subsidiarity, lead to a design approach that results in an overall design that is largely focused on the development and support of effective schools (Healey, 1997). This approach would have one initially asking, "What functions, sub-functions, roles, responsibilities, and decision-making authority need to be devolved all the way down to the level of the school such that the schools can become effective?" Once this understanding of a high-quality *school* has been defined, one would then ask, "What functions, subfunctions, roles, responsibilities, and decision-making authority must be devolved all the way down to the level of the district such that it can establish and support these effective schools?" And so on, up to the province, and ultimately, the center.

Accountability-Related Design Principles

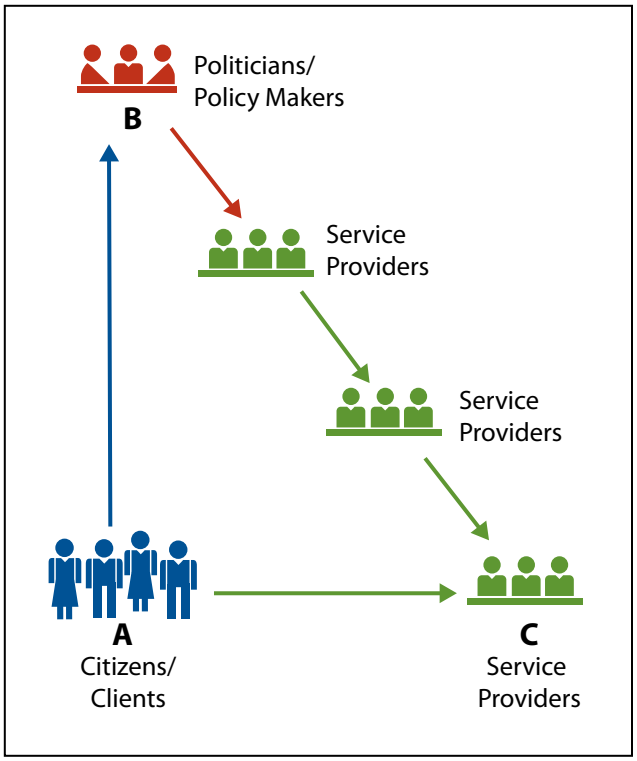
We have noted that when a decentralized education system has been designed with effective schools in mind, it stands a far greater chance of manifesting effective schools than if than would otherwise be the case. But more needs to be considered for this to actually happen. The whole issue of accountability must be factored into the design as well.

Using the accountability paradigm put forth in the 2004 World Development Report (henceforth WDR 2004; World Bank, 2004), we show in Figure 1 an accountability triangle comprising three basic accountability sides, or relationships: side AB, or that from the citizens/clients to the politicians/policy makers; side BC, or that from politicians/policy makers to the service providers; and side AC, or that from citizens/clients to the service providers. Sides AB and BC make up what WDR 2004 calls the long route of accountability, while side AC is referred to as the short route of accountability.

[8] While we have focused on the characteristics of effective schools per se, one could focus on an equivalent set of must-haves at the classroom/school level that help to bring about high-quality teaching and learning (see Healey, 1997).

[9] These seven characteristics of effective schools are a distillation of a number of lists of characteristics of effective schools from the vast literature on the subject. See http://www.effectiveschools.com; Shannon and Bylsma (2007); Sammons, Hillman, and Mortimore (1995); and Public Center for Children and Youth (2008).

Figure 1. Accountability triangle of a centralized system



WDR 2004 makes the obvious point that when all three sides of the triangle work well, one has system-wide accountability, and the citizens/clients receive the services they need or want up to, of course, the limit provided by technological or economic feasibility—that is, they receive an efficient and equitable level of services. When there are weaknesses in any one of the triangle's sides, accountability weakens, and service provision can suffer.[10] We therefore ask: what design essentials of each side of the accountability triangle need to be factored into the overall design?

According to the WDR 2004, the citizen/client–service provider side (AC) of the triangle, or the short route of accountability, can be strengthened by increasing "client power" through *choice, participation, or both*. Choice is realized when, for example, clients are given vouchers they can use to pay a particular provider for the specific services they desire. Providers that offer unwanted or unneeded services, or that do not provide wanted or needed services well, will fall by the wayside—they will be held to account by simple market forces. Alternatively, to encourage loyalty rather than choice, the power of citizen voice has to be increased so as to hold providers accountable. Clearly, in a public education setting, the more one can mimic a private market scenario, the stronger this side of the accountability triangle will become. In particular, citizens need to have viable options (e.g., choice or voice), and information on what each service provider offers and how well they offer it must also be available to the clients so that they can make an informed choice or exercise voice. That choice might not be possible in some settings (e.g., rural education) means that participation may be the only way of strengthening this side of the accountability triangle.[11]

Participation is realized when clients have a meaningful say in what a particular public sector service provider does. School boards, for example, can offer parents a meaningful say over what goes on in a school, both with regard to what the school does (e.g., what it might offer in the way of specialized classes) and how well the school performs. But for this to happen with effect, school-level service providers should ideally be directly accountable to the school governing body or parents' committee, else one has to go through what the WDR 2004 calls the *long route of accountability*, which, as we will soon show, is simply too long in most cases to be effective.

[10] WDR 2004 also makes the interesting point that while in principle it might be possible to have a purely democratic system, namely one that is mostly based on sides AB and BC, this presents certain problems. First, it may simply not be enough—the long route may be too long to be effective. Second, it may take a long time for such systems to develop—in the rich countries they took centuries to develop, and may in fact have developed in addition to strong relationships between citizens and service providers (AC). As a legacy of colonialism, poor countries often imitated only AB and BC and, as a result, may be under-providing themselves with the quality of education they could achieve under better institutional arrangements.

[11] It should be noted that the impact of school choice has been studied in various places around the world, and the findings are mixed. Chile's voucher scheme that was introduced in 1981 has, according to Hsieh and Urquiola (2006) and McEwan, Urquiola, and Vegas (2008), shown negligible gains in student achievement. Ladd (2002) observes that the gains of New Zealand's school choice scheme were small, while Hoxby (2003) in a study of some school choice schemes in the United States reported that student achievement did improve.

If the school board is an elected body, and if it hires the school principal (or at least has considerable say over who is hired, or the promotion decisions involving the principal), and if the school principal hires the school's staff (or at least has strong influence over who is chosen as well as their advancement and rewards), and if the principal is given the resources and freedom to do what he or she is being held accountable to do, then the short route works and one has real client power. The point here is that if one really wants to strengthen this short route of the accountability triangle, one needs to decentralize.[12] We will discuss this further along in the paper.

According to the WDR 2004, the citizen/client–politician/policy maker side of the accountability triangle (AB) can be strengthened through honest and fair elections that (1) have politicians going out to the electorate to find out what the people really want and need and (2) are structured to ensure that the people know exactly where each candidate stands on the issues. Strong, capable, and well-informed advocacy groups—groups that represent the wants and needs of the people being represented by the politicians—are also necessary if elected politicians are to work toward their constituents' goals amid the countless competing demands of "politics." Widely available politician report cards that show how well each politician is doing vis-à-vis his or her campaign promises can also help strengthen this side of the accountability triangle.

As for the politician/policy maker–service provider side of the triangle (BC), WDR 2004 notes that this can be strengthened by such things as aligning service provider incentives with outcomes, giving clear instructions to the service provider backed with the resources needed to achieve the outcomes, and reporting information on provider actions and the outcomes linked to those actions.

While these measures can help strengthen the long route of accountability, the fact remains that in a centralized system, such as that depicted in Figure 1, this route is still very long. This is why we say that to the extent possible one should do whatever one can to shorten the long route of accountability, which is exactly what decentralization (or school autonomy at the extreme) does. Recall that in Figure 1, the long route of accountability is delineated by the A → B → C pathway. The short route of accountability is the A → C pathway. That the A → C route is shorter here does not necessarily mean that it is more effective.

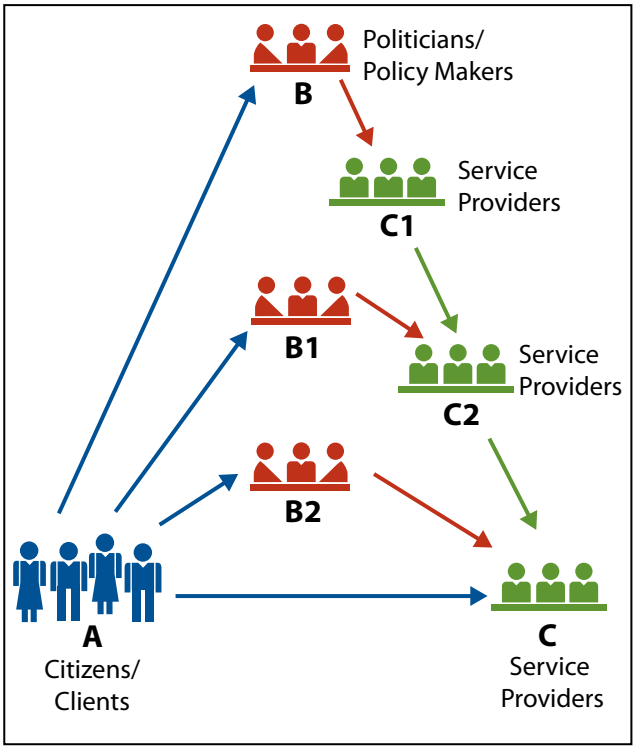
In a centralized education system where school-level service providers are hired by the center, and are therefore accountable to the center, either directly or indirectly, citizens can voice their concerns all they want to school leaders but those concerns will likely fall on deaf ears. Citizens'/clients' only recourse, then, is the long route. But how effective can this possibly be, even in the best of circumstances? Imagine a citizen complaining to his or her representative in Parliament about the quality of education in the local school. Imagine that parliamentarian calling the Minister of Education to parliament and asking him or her about the quality of education in that particular school. Now imagine the minister communicating through the bureaucracy (and the bureaucracy communicating back to the minister) in an effort to report on what exactly is going on at that school. Imagine then the minister getting back to the parliamentarian on his understanding of what is going on, etc. It makes no sense whatsoever however "strengthened" the two arms of the long route might be.[13] What needs to be done is to shorten the length of the long route, as shown in Figure 2.[14]

[12] Some writers call this level of decentralization "school autonomy."

[13] In fact, most citizens simply lose interest in being concerned about the general good. Also, it should be noted that it takes a lot of time (decades) to perfect this system.

[14] It is critical to note here that there are no hierarchical lines between governing bodies. Lower-level governing bodies are not accountable to high-level governing bodies; they are accountable only to the people who elect them to office.

Figure 2. Accountability triangles: decentralized system



When, as a result of decentralization, an elected local school board hires the school principal, who in turn hires the school's staff, then when a problem arises at the school and the principal is unresponsive to a citizen's complaint, the citizen/client can go to the school board and complain.[15] The school board can quickly speak to the principal and find out what is going on and remedy the situation. Put another way, when A → C (the short route) does not work, A → B2 → C (the shortened long route) should remedy the situation much more quickly and effectively than A → B → C (the original long route). Furthermore, because the principal here is accountable to the school board, he or she will in all likelihood be much more responsive to the citizen. So by shortening the long route, decentralization also renders the short route more effective.

[15] It should be noted that the main thing that citizens should do here is complain within a policy framework, not, say, about a particular teacher or some such issue. Otherwise one could precipitate nepotism, insularity, etc. So parents ought to have the right to complain that norms and quality are being violated, not that they dislike a particular teacher.

What we have illustrated here can all be summed up as a major design principle: efforts should be made to create as much *horizontal accountability* as possible, while not eliminating key vertical accountability linkages. (When an elected governing body such as a school board or a district assembly hires the executive director *of that level* [i.e., school principal, district education director] and that executive director is accountable to the governing body for carrying out the responsibilities and functions assigned to that level [through the staff he or she hires], that is horizontal accountability, especially if the governing body can remove the executive director for nonperformance. Such horizontal accountability is what the shorter long routes represent. When the executive branch of a lower-level jurisdiction is accountable to the executive branch of the next higher level up, that is vertical accountability.)

While a primary characteristic of decentralization is increased horizontal accountability, it does not mean that vertical accountability should be entirely eliminated—it is still critical for the proper running of an education system. In a decentralized situation, the central ministry may no longer hire the executive director of the province or district, but the minister is still responsible for the overall well-being of the education system. Via a number of reporting and communication channels (but not through bottom-up planning, see below), higher-level actors like the minister can come to know what is happening and needed in lower levels of the system, while lower levels of the system can be apprised of higher-level priorities and policies. If a province is performing poorly, the minister must have at his or her disposal a set of protocols that allow him or her to do something about it. At first, the minister may simply discuss the matter with the provincial education director. If after that the province is still performing poorly, the minister may publicly shame them by publishing test scores in the national newspaper. Ultimately, the minister must have the right to intervene entirely, remove the provincial education director, and do what he or she feels is necessary to improve the education performance of the province.

There can be no real horizontal accountability if there is ambiguity between governance functions and entities and management functions and entities; there should be a very clear demarcation between governance and management. Accordingly, it must be very clear what the two entail, how they differ from each other, and how they relate to each other. Governance is largely about establishing broad policies and setting goals, management is primarily about implementing those policies and achieving those goals. The problem arises when the governing body begins to do what the managing body should be doing (or vice versa), for in that instance, who is held to account if the policies are not implemented or the goals are not achieved? Or, what happens when two entities try to establish and implement policies that contradict each other? Accordingly, a governing entity should establish the mission and vision, make the laws and policies, approve the budget, know the final audit of school spending, etc., while the managing entity should execute the strategy, laws, and policies and spend the money in order to realize the mission and vision.

Finance-Related Design Principles

On multiple occasions thus far, we have stated that if people do not have the financial resources needed to carry out the functions they have been given, they cannot be held to account for not performing them: funds must follow functions.[16]

Before we discuss other key finance-related design principles, we must note that in a more decentralized situation, funds can be (a) raised by lower levels of the system (e.g., through the collection of taxes and/fees), (b) sent to lower levels of the system from the center, or (c) a combination of both a and b. Option a should be eschewed because it can lead to gross fiscal inequity due to the fact that the fiscal capacity of lower-level jurisdictions will inevitably vary. Those with greater fiscal capacity can generate a lot more resources than those will low fiscal capacity. The preferred approach, then, would be either b or c so that the different fiscal capacities and of lower-level jurisdictions can be equalized via the funds transferred from the center.[17]

One key finance-related design principle is that these funds need to be distributed to lower-level jurisdictions in an equitable manner, so a funding formula that is primarily enrollment-based should be used to distribute those funds.[18,19] A funding formula that is solely enrollment-based would, as shown in Table 2, have the same per-student allotment for every school, district, or province, which when multiplied by their respective enrollments would yield the total amount going to each jurisdiction.

Table 2. Example enrollment-based funding formula

School	Enrollment	Funds per Student	Funds per School
A	598	$76	$45,248
B	345	$76	$26,105
C	231	$76	$17,479
D	987	$76	$74,682
E	478	$76	$36,168
F	398	$76	$30,115
G	267	$76	$20,203
Total	**3,304**		**$250,000**
Available Funds: $250,000			

While this simple funding formula is highly equitable, it fails to deal with the fact that not all schools (or the communities they serve) are the same. Some schools serve very poor catchment areas while others serve not-so-poor families. In order to achieve a level

16 The perspective taken in this paper is that of a centralized education system being decentralized rather than that of a stable and long-decentralized system that is being somewhat reformed. Accordingly, it is assumed that lower-level jurisdictions have little to no revenue-generating capabilities—that they need large central transfers of money in order to carry out the functions that have been decentralized to them.

17 While we note that the preferred approach would be either option b or option c, the remainder of this paper refers to option b, largely because the decentralization of the revenue-generation function is often held off by the center for a very long time and a discussion of option b addresses all the design principles that would be required of option c.

18 Here we are referring to recurrent funds. For capital funds to be distributed equitably, an algorithm that is based on need should be used.

19 Accordingly, the functions needed to develop and implement a funding formula must become part of the design.

of *vertical equity*, funding formulas often factor in poverty, as shown in Table 3.[20] Specifically, schools that serve poorer communities should receive more money *on a per-student basis* (School G), while schools that serve less poor communities should receive less money on a per-student basis (School A). Note that the school with the largest enrollment (School D) still gets more overall money because enrollment still factors into the formula.

While funding formulas are important to ensure an equitable, transparent, and low-transaction-cost distribution of money across jurisdictions, they are also critical in that they give jurisdictions a very good sense of how much money they will get on an annual basis, so they add predictability.[21] If the mechanics of the funding formulas used to distribute the money are well known[22] and each jurisdiction knows where it stands with regard to the various factors that are accounted for in the funding formula (i.e., their enrollment, their poverty index, etc.), then they can calculate how much money they will get, more or less, on an annual basis, as long as the factors used do not keep changing.[23] This means that schools, districts, and provinces can plan for and budget the money they know they will receive over time.

This underscores yet another critical finance-related design principle for a decentralized education system: strive to eliminate bottom-up planning and budgeting. Bottom-up planning, in theory, is better than purely top-down planning, but it is definitely not decentralization since it encourages vertical relationships and can be just as fraught with favoritism, nontransparency, and clientelism as top-down budgeting. In many countries, the planning/budgeting cycle begins with a request from the MOF for lower-level jurisdictions to put together plans and budgets and to pass them on up to the next level where they are joined to that level's plans/budgets, etc. The problem with this bottom-up planning/budgeting is that it promotes the creation of "wish lists" and exaggerated budgets; the rationale being that if you ask for X, you might hope to get three-quarters of X.[24] After years of doing this, together with various negotiations across all levels of the system for money, one can end up with extraordinary inequities, such

[20] Funding formulas do this because the poor often need more support to overcome socioeconomic disadvantages.

[21] The assumption here is that we are talking about non-personnel recurrent resources.

[22] Because dissimilarities between schools go beyond poverty, efforts to account for them can lead to very complex funding formulas. We maintain that every effort should be made to keep funding formulas as simple as possible else they lose a lot of the transparency they are meant to convey. Also, if a lot of factors are introduced, there is a tendency on the part of schools (or any sub-national level) to spend a lot of time lobbying for changes in the formula, instead of managing funds at their own level—similar to what happens with ad hoc, negotiated budgeting. So complex formulas not only lose transparency, but they also lose some of the transactions-cost-lowering effect that formulas in general are meant to create.

[23] This is why funding formulas need to be as simple as possible.

[24] There is a particular irony in the term bottom-up "planning": if all lower-level jurisdictions are just generating wish lists and they have little knowledge of how much money they will ultimately receive, how can such a thing be called a plan?

Table 3. Example enrollment- and poverty-based funding formula

School	Enrollment	Enrollment Shares	Poverty Index	Weighted Enrollment	Poverty Shares	Total Weighted Shares	Money per School	Per Student Allocation
A	598	0.181	0.27	759	0.161	0.171	$42,805	$71.58
B	345	0.104	0.55	535	0.114	0.109	$27,262	$79.02
C	231	0.070	0.49	344	0.073	0.072	$17,885	$77.43
D	987	0.299	0.44	1,421	0.302	0.300	$75,108	$76.10
E	478	0.145	0.35	645	0.137	0.141	$35,231	$73.71
F	398	0.120	0.39	553	0.118	0.119	$29,758	$74.77
G	267	0.081	0.67	446	0.095	0.088	$21,950	$82.21
Totals	**3,304**	**1.000**		**4,704**	**1.000**	**1.000**	**$250,000**	**$75.67**

as those we found in Egypt, where one governorate had been receiving 243 Egyptian pounds (EGP) per student for non-personnel recurrent expenditures and another only EGP 24 per student (see Figure 3). These systems also encourage a "begging" or negotiating mentality in the lower levels, and a "lord" or "king" mentality in the higher levels. They also require that more time be spent in negotiating than in true planning at one's own level.

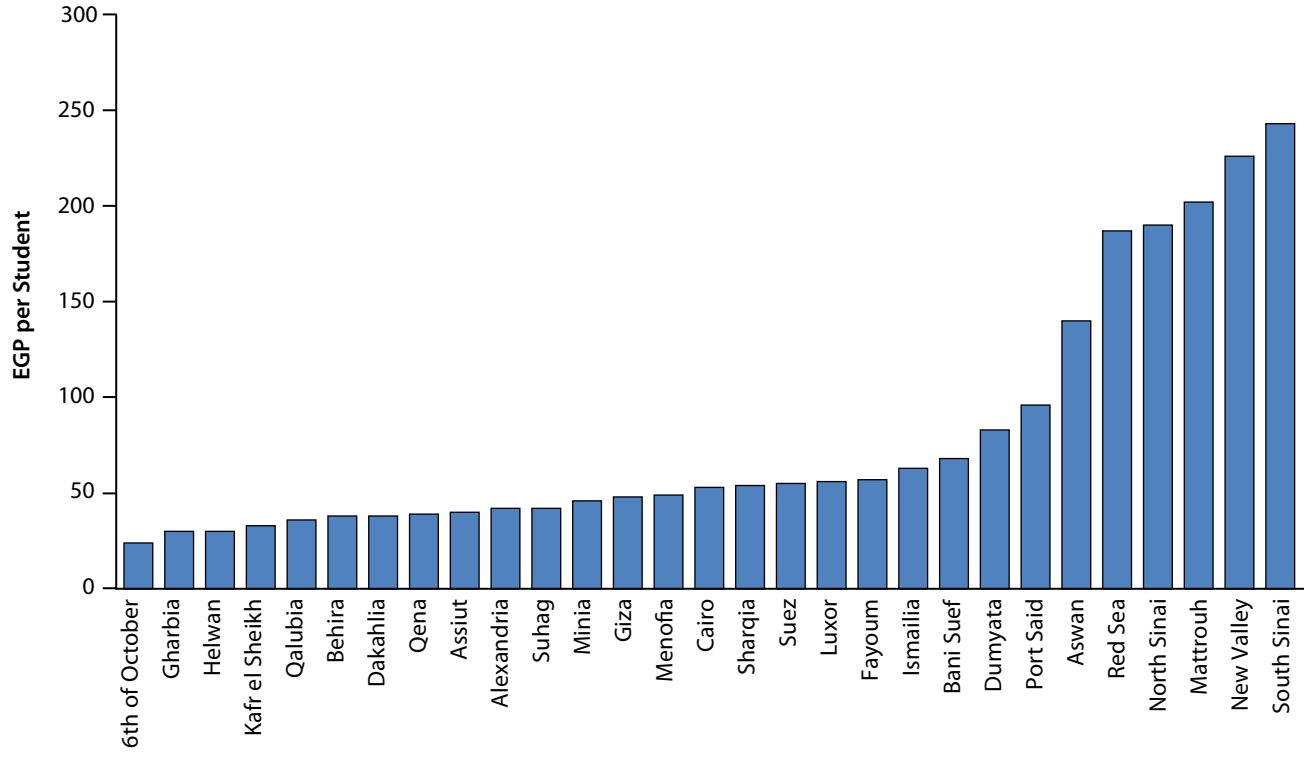
How then do higher-level jurisdictions come to know the needs and wants of lower-level jurisdictions? Needed is another critical element of design: institutionalized interjurisdictional forums and systems in which all the needs-related information/data can flow between levels on a regular basis. South Africa's 4x4 and 10x10 forums are a very good example of these kinds of forums (see Layman, 2003).

Implementation-Related Principles of Design

While implementation is critical for successful decentralization, to delve deeply here into the issues surrounding high-quality implementation would be beyond the scope of this paper. Instead, we focus solely on elements of implementation that should be factored into the design.

Centralists, particularly those who have a major stake in the status quo of a centralized system, often argue that a major reason for not decentralizing certain functions to lower levels of the system is that the actors there do not have the capacity to carry them out. Were this to be a valid reason for not decentralizing certain functions to lower levels of the system, it would seriously alter the overall design. However, our experience shows that the centralists' claim is largely not true, at least for the functions

Figure 3. Disparity in Egyptian pounds allocated per student for non-personnel recurrent expenditures across Egyptian governorates, 2010



Source: Analysis carried out by the authors using Government of Egypt data.

that *should* be decentralized to these levels (as per the principles being laid out in this paper), but that some conditions have to be met in order for this to be so. First, in most instances one *does* have to build the capacity of actors to carry out new functions. But if one wants these actors to acquire the needed capacities, there has to be some real stake in the matter for them. Otherwise there is little incentive for them to invest their own time in learning the functions being transferred. Specifically, they have to know *for certain* that decentralization will happen, if it hasn't already, and that they will be held accountable for carrying out the functions they are being trained to perform.

Decentralization, then, has to happen more or less at the same time as capacity is being built, otherwise actors will not take the capacity building effort seriously. Moreover, it is also the case that in centralized systems there *appears* to be less talent at the local level largely because talented people do not come forth to manage and govern anything until there is something real to manage and govern. So it is especially important that these actors receive actual funds to manage and responsibilities to carry out the funded functions.

While actors can learn the skills needed to carry out the particular functions decentralization may ask them to perform, we admit that some key ancillary competencies may take longer to acquire. For example, school-level stakeholders can easily learn how to develop plans and budgets for spending newly acquired government money for certain types of spending using clear procurement and accounting processes. Making sure that this money is well spent with regard to improved *teaching and learning* is an entirely different matter. It is not that school-level stakeholders cannot learn this but that the capacity-building needed for decentralization to succeed is not just a matter of learning particular functions. The stakeholders need to be taught what makes a *quality* difference in education spending. Imparting this intellectual backdrop on all school-level actors will take time. Furthermore, much of what needs to be learned is behavioral, not merely cognitive. Stakeholders at the lower levels of the system can learn to do a lot of things, but if all their professional lives they have been told what to do by the center, it will take some additional support and guidance for them to make well thought out decisions habitually.

Near-ongoing training and support will be critical to the successful implementation of any decentralization effort, so some sort of a decentralization support infrastructure (DSI) will need to be established. The DSI should comprise a dedicated network of highly trained change agents who can provide all of the training and support needed to ensure that decentralization unfolds as smoothly as possible. This DSI must factor into the overall design.

What exactly this DSI looks like will depend largely on the context within, and the extent to which, decentralization is unfolding. Nevertheless, some characteristics should be common to all such DSIs. The first is that this DSI should ideally be part of the Ministry of Education (MOE) itself, comprising the system's own trainers and support staff. As we see it, a true decentralization effort should always be *an MOE undertaking*, not a donor project. Of course, donors can and should support the effort by providing the necessary technical assistance. But the actual implementation should be carried out by the MOE itself. Only then can there be a chance of widespread ownership and sustainability.

Second, there should be a DSI presence, be it a single person or a team of people, within every jurisdiction in the country, and that person or team must have the proper authority to carry out their job, especially if some of what they have to do is to get *others* to do what decentralization demands of them.[25] In most instances, this authorization will likely come from the Minister of Education through a decree that establishes the DSI and lays out the job descriptions of its membership.

Third, within the DSI there needs to be a hierarchical relationship among those working at various levels of the system. We say this because much of the training they will do will probably have to be cascade training and because the DSI has to work as a system.[26]

[25] Our experience in Egypt has shown that some lower-level actors see decentralization as generating more work for them and are inclined not to take action without the constant pressure the DSI can exert upon them.

[26] Cascade training occurs though a series of trainers where, say, 50 master trainers train 900 trainers who, in turn, train 150,000 stakeholders at the school level.

Information, training materials, and requests of all sorts have to flow downward through the DSI, while monitoring reports, lessons learned, and problems have to work their way upward. None of this will work without some vertical accountability and hierarchy.

If the DSI staff come from the MOE's existing pool of trainers and support staff, much of the overall cost of the DSI would already be paid for (e.g., salaries and expenses). To the extent that the DSI does not have sufficient non-personnel recurrent funds to perform their jobs adequately donor funds could be used to help cover the costs. But, a word of caution: to the extent that any recurrent, as opposed to start-up, aspect of implementation becomes dependent on donor funds, one runs the risk of that aspect not being sustained once the donor support money is gone. So every effort must be made to get the host country government to budget and pay for as many of these expenses possible, in particular the recurrent ones.

While the focus of this document has been *education* decentralization, it is important to realize that this can, in most instances, really only happen within a larger national decentralization effort. At the very least, both fiscal and political decentralization have to take place right alongside the administrative decentralization that is unfolding within the education system. Recall our discussion on horizontal accountability—it cannot happen without some degree of political decentralization. Boards of trustees (BOTs) and district and provincial assemblies have to be in place for horizontal accountability to happen. And without fiscal decentralization, funds won't follow function, nor will lower-level entities be able to exercise the freedom to spend those funds according to various school or district improvement plans. Inability to orchestrate the minimally required amount of decentralization along all *three* fronts (administrative, political, and fiscal) will hamper what one might hope to achieve in decentralizing the education sector. The point here is that design needs to go beyond the education sector.

A summary of the basic design principles is offered in the text box below.

Basic Design Principles

- Principle of subsidiarity
- Design is primarily about functions; functions should be
  - Detailed
  - Distinct
  - Clearly defined
  - Assigned to someone
  - Assigned to no more than one actor
- Factor in the reasons why some certain functions should be more centrally or locally located
- Design the system around the characteristics of effective schools, starting at the school level and working upward to the center
- Embrace elements beyond the education sector (i.e., finance, local administration, civil service), to the extent possible
- Increase client power: choice and participation
- Strive to have honest and fair elections of governing bodies
- Develop strong and capable pro-democracy and pro-children advocacy groups
- Create governance-body member report cards
- Align service provider incentives to desired outcomes
- Maximize horizontal accountability
- Minimize vertical accountability but maintain key vertical accountability linkages
- Ensure proper information flows
- Develop inter-jurisdictional forums
- Clearly demarcate governance and management functions/entities
- Ensure that funds follow functions
- Use simple enrollment- and poverty-based funding formulas
- Avoid bottom-up planning and budgeting
- Do not let the perceived incapacity of people to carry out certain functions influence what functions should be devolved downwards—they can and must be trained
- Design for a Decentralization Support Infrastructure within the government

Putting It All Together: Creating a Functions Allocation Matrix

Given these design principles, how does one go about the process of assigning specific functions to different levels and actors of the system? We recommend the use of a function allocation matrix—a table that allows one to locate specific detailed functions to a particular level and actor working at that level of the system.[27] In Table 4 we list a number of functions and sub-functions under the broad education domain *School Improvement*.[28] When reviewing this function allocation table we ask that you note a few things.

First, a comprehensive table of this sort applied to a real country would be many times larger.[29] Second, one can argue whether or not each of the functions listed in Table 4 should be listed under the rubric of *School Improvement*. Admittedly, some functions have been liberally placed there to help illustrate the kind of thinking that goes on in determining what level and actor a particular function should be assigned to. In principle they could be placed under another rubric. But that is not the point—the point is why that particular function has been assigned to a particular actor at a certain level. Third, the list of functions presented in Table 4 is in no way exhaustive; many more fall under the domain of *School Improvement*. To list them all would create a table two to three times as large as Table 4. Finally, it is important to pay close attention to the text in the row under each function that is labeled "Rationale/Comment" because much of the thinking behind the function allocation process is expressed there.

[27] Recall that Pritchett and Pande (2006) advocated unbundling jurisdictions into catchment areas; we, on the other hand, prefer to unbundle them into their constituent actors since that helps to ensure that no one function is incidentally assigned to more than one actor. Should one function be assigned to two actors, the relationship between those two actors and the work they will actually perform needs to be delineated in the Rationale/Comments section of the table.

[28] In an effort to ground what we have talked about in theory to a practical situation, we have drawn upon the draft design that was developed in Egypt. The allocated functions in Table 6 reflect what is in that draft design.

[29] The one that has been developed for Egypt is over 30 pages long.

Table 4. Illustrative annotated function allocation table

Functions and Sub-Functions	Level	Responsible Actor
1. Set broad policy direction of the school	School/Community	Board of Trustees (BOT)
Rationale/Comment: The BOT is the school governing body whose overall role, among other things, is to set the overall direction of the school as per the needs and wants of the community. This helps to establish horizontal accountability and also helps to clearly demarcate the line between governance and management.		
2. Mobilize the community vis-à-vis school improvement	School/Community	BOT and Principal with Staff
Rationale/Comment: This helps to realize a characteristic of effective schools, *Create a well-developed system for sharing school-related information with a broad range of constituents*. It also helps to further the establishment of horizontal accountability by engaging the public, whom the BOT and school are meant to serve. Note that one function has been assigned to two actors, the BOT and the school, something we have stated should not be done. Here this function is primarily that of the BOT, and it should be written up in the terms of reference of all BOT members, while at the same time acknowledging that the school should, in its day-to-day operations of engaging with the parents, play a substantial supportive role here as well.		
3. Prepare annual school improvement plan (SIP)*	School/Community	Principal (with Staff)
Rationale/Comment: This helps to realize a characteristic of effective schools, *Authority over budget and personnel.* Also, the development of a SIP requires localized/subtle forms of information and so has to be carried out at the school level. Speed of transaction also factors in—if a higher-level actor developed these plans it would take too long—as does customer satisfaction: when SIPs are developed at the school level, they can address the specific needs/wants of the parents whose children attend the school.		

(continued)

Table 4. Illustrative annotated function allocation table *(continued)*

Functions and Sub-Functions	Level	Responsible Actor
4. Prepare the budget for the SIP	School/Community	Principal (with Staff)
Rationale/Comment: This helps to realize a characteristic of effective schools, *Authority over budget and personnel*. Also, both local information and speed of transaction support locating this function at this level. Note: the money being budgeted is Government of Egypt money that comes from the center and is passed on down to the schools via an enrollment- and poverty-based funding formula.		
5. Design the funding formula	National	Director of Finance Within the MOE
Rationale/Comment: Equity financing that also strives to achieve a degree of vertical equity: In order to ensure broad-based equity of financing, the basic funding formula should be designed at the national level by people who understand education finance		
6. Approve the basic funding formula	National	Parliament
Rationale/Comment: Broad overarching policy directives are implicit to any funding formula (the weight given to the poverty shares; the weights given to different stages, etc.). Since such broad policy directives are largely a governance function, the basic parameters of the funding formula should be approved by the governing body at the national level—Parliament. This also helps to establish horizontal accountability and demarcate the overall governance function from that of management.		
7. Adjust certain aspects of the funding formula to accommodate local contexts	Province	Director of Education
Rationale/Comment: The national level can allow lower levels of the system (province and/or district) to adjust certain parameters of the funding formula to accommodate local needs/wants and contexts (e.g., they may allow the province to alter certain weights within a percentage range). By way of example, a province/district may want to move a little bit more money into middle schools such that they can begin to perform higher than the national average. They could then adjust the weights given to the various stages within the guidelines set by the national level such that this could happen.		
8. Approve the adjustments	Province	Provincial Assembly
Rationale/Comment: Since an adjustment to a funding formula reflects a broad policy directive, the governing body at the level at which the adjustment was made should approve them. The center would ensure that the adjustments that were made by the province were within the guidelines set by the center.		
9. Post the School Improvement Plan (SIP) and budget in a public place	School/Community	School Secretary
Rationale/Comment: This helps to realize a characteristic of effective schools, *Create a well-developed system for sharing school-related information with a broad range of constituents.* It also helps to establish horizontal accountability. Citizen watchfulness has proven to be a very good way of ensuring that the money is spent according to plan/budget.		
10. Present the plan/budget to the BOT	School/Community	Principal
Rationale/Comment: That function 12 is located at the school level logically suggests that functions 10 and 11 should be located there as well. Also, one wants a clear line of demarcation between school management/administration and school governance. The school develops and implements the plan; the BOT (as shown below) approves it. Since the principal is the CEO of the school and the one hired by the BOT, s/he should be the one to present the plan to the BOT.		
11. Present the plan/budget to the community	School/Community	BOT
Rationale/Comment: This helps to realize a characteristic of effective schools, *Create a well-developed system for sharing school-related information with a broad range of constituents*. It also helps to establish horizontal accountability at the school level.		
12. Approve School Improvement Plan and budget	School/Community	BOT
Rationale/Comment: Both the principle of subsidiarity and the effort to establish horizontal accountability locate this function here. Also, it helps to further demarcate the division between the overall governance function and management. Note: As is the case at the national level, where the governing body at that level (parliament) approves the national budget, logically the BOT should approve the school's plan and budget.		

(continued)

Table 4. Illustrative annotated function allocation table ***(continued)***

Functions and Sub-Functions	Level	Responsible Actor
13. Implement/manage the SIP	School/Community	Principal (with Staff)
Rationale/Comment: The school is the managing body at the local level, the BOT is the governing body at the local level. Accordingly, the school implements and manages the SIP. The BOT oversees the work of the school. The call to ensure that there is a clear demarcation between management and governance has the school and not the BOT doing this work. Reasons for locating this function at the school/community level include characteristics of effective schools, the principle of subsidiarity, speed of transaction, and establishing horizontal accountability.		
14. Purchase goods and services as per the SIP and budget	School/Community	Procurement Committee of the School
Rationale/Comment: This helps to realize a characteristic of effective schools, *Authority over budget and personnel*. Also, both speed of transaction and customer satisfaction suggest this function should be located at the school level.		
15. Ensure all MOF regulations are adhered to as school implements the SIP and spends the money	District	Financial Supervisor (with Staff)
Rationale/Comment: While a major characteristic of decentralization is horizontal accountability, some vertical accountability linkages are still critical. Locating this function at the district level maintains some critical vertical accountability linkages.		
16. Maintain school financial records	School/Community	School Secretary
Rationale/Comment: Speed of transaction would locate this function at the school level.		
17. Audit the financial records of the schools	District	Financial Supervisor (with Staff)
Rationale/Comment: As noted for function #15, it is important to maintain some critical vertical accountability linkages.		
18. Oversee and monitor SIP implementation	School/Community and District	BOT District Quality Team
Rationale/Comment: Horizontal accountability would locate this function at the school level and in the hands of the BOT, the school's governing body. But the principle of maintaining some key vertical accountability linkages would locate this function at the district level, in the hands of the Quality Team. Although one function is being carried out by two actors, it will not lead to the kind of confusion that makes the one-function-one-actor principle necessary. The BOT oversees because it needs to make sure that the school is moving in the proper direction; the district oversees and monitors to make sure the school is achieving the results it should be achieving and, to the extent it is not, supplies the support necessary to help it do so.		
19. Report SIP progress to BOT	School/Community	Principal
Rationale/Comment: Horizontal accountability and the clear demarcation between management and governance would locate this function at the school level in the hands of the principal. So too would speed of transaction and subtle forms of information.		
20. Provide SIP progress report to community	School/Community	BOT
Rationale/Comment: The characteristic of effective schools *Create a well-developed system for sharing school-related information with a broad range of constituents*, as well as good governance—keeping the electorate well informed, would locate this function at the community level, in the hands of the BOT. So, too, does horizontal accountability.		
21. Support schools in the overall school improvement process	District	Director of School Support (with Staff)
Rationale/Comment: Both speed of transaction and local information would locate this function at the district level.		

* The development of these SIPs is required by the new School Accreditation Law in Egypt.

Generating Widespread Ownership and Demand for the Design

Given this basic understand of the nuts and bolts of creating a function allocation matrix, we now discuss how such a design could be crafted such that there is widespread ownership and demand for the "final" product. We maintain that this less technical side of the design process is as important as the technical side of the design process we just presented, largely because our experience has shown that without widespread ownership and demand, reform, no matter how technically robust it may be, will more often than not fail. Here we draw upon the work we did in Egypt.

The MOE in Egypt first delved into decentralization in 2000, when it allowed a pilot effort to unfold in Alexandria and, based on that success of that effort, allowed it to spread to several other governorates. By 2007, decentralization had become a core pillar in the *National Strategic Plan for Pre-University Education Reform in Egypt 2007/08–2011/12*. In 2007, the Ministry of Finance (MOF) agreed to allow the MOE to pilot decentralized finance. In 2008/09, EGP 8.5M of the MOE's non-personnel recurrent budget was decentralized to every school in three governorates: Fayoum, Ismailia, and Luxor. With the success of that effort, the pilot was repeated in 2009/10 with a sum of EGP 10.1M. In 2010/11, decentralized education finance went nationwide with nearly EGP 449.2M.

Faced with what was unfolding quickly as a rather piecemeal and largely politically driven decentralization effort, the MOE was advised to develop a comprehensive and coherent vision, or design, of what a high-quality decentralized education system looks like such that they could develop a decentralization action plan to methodically guide the MOE in its decentralization efforts. The MOE agreed to the task, and a rather comprehensive function allocation matrix was developed, as per the approach put forth in this paper, by a group of six people from within the MOE's Policy and Strategic Planning Unit (PSPU).

This initial draft design was then shared with a group of nearly 100 stakeholders from the center who together represented the core education domains of the education system: curriculum, textbooks, student assessment, school improvement, academic accountability, continuous professional development (teachers and non-teachers), information, M&E, human resources, and planning/budgeting/finance. This group of stakeholders was first shown how the function allocation matrix was developed—the conceptual and practical aspects behind it. They were then asked to break up into their respective education domains (there were four or five people from each domain) and as a group determine whether all the functions and sub-functions that were in the draft design under the heading of their particular educational domain represented the universe of functions in that domain. Once the list of functions and sub-functions was agreed to have been exhaustive, we worked with each group separately to allocate the functions from where they were in the present system to where the group felt they should be in a decentralized situation (keeping in mind all of the design principles laid out in this document). Work with each group in this regard took 1 to 2 days. All told, the effort took about 2 weeks.

As of the Revolution of 25 January (2011), the design is a 31-page table in which hundreds of detailed functions are allocated. The revolution has slowly opened the door for this design to be discussed (and adjusted) among a much wider audience. Plans are now underway to use the latest draft design as the subject of a national dialogue. The objective of this dialogue would be to obtain widespread participation in and ownership of the design and in the process of doing so underscore the critical links between decentralization and democratization.

This national dialogue would unfold on two levels. At the local level, there would be at least 27 dialogues, one in each governorate, to which key district and school- or community-level stakeholders would be invited to participate. Whatever design emerged from this set of dialogues would then be shared and discussed among a large group of national-level stakeholders, including members from each party, various other interest groups, stakeholders within various ministries, academics, and local and international experts. A final vision would be

reconciled from all of the input and posted on the MOE's website for public comment. After 2 to 3 additional months of commenting and fine-tuning, the design would be considered final.

What to Do With the Design

A major reason for developing a widely owned detailed design of a high-quality decentralized education system (or part thereof) is to use it as a destination point toward which the entire education system (or part thereof)—its laws, policies, organizational structures, institutions, etc.—can methodically strive to transform itself, such that in 10 to 15 years' time, that distant system/subsystem is more-or-less realized. We say "more or less" realized for a number of reasons, the overarching one being that the design, as detailed as it may be, is not, nor ever should be considered, a blueprint. Why? First, as time progresses new knowledge will be generated that will inevitably impact the design. Imagine, for example, the impact e-books might have on the education domain of textbooks. Were they to replace hard copy textbooks, the entire textbook printing and distribution section of the design would have to be altered, if not entirely eliminated.[30] Second, as noted at the beginning of this paper, there is a very active and aggressive political economy around most every education reform. Interest groups that have a substantial stake in the status quo will fight changes that threaten their stake.

While valiant reform support efforts to usher in reform must be made, the fact remains that while some political-economic battles will be won, others will be lost. Just because the design is "fully endorsed" by the Minister, and "widely owned/demanded" by stakeholders throughout the system does not mean that reform will just happen.

Third, unforeseen circumstances will surely have their impact on the design itself as well as the movement toward its realization. Who, for example, ever thought that what was started on January 25 would lead to where Egypt is today? Finally, there is the issue of cost: can the country afford the design that has been developed? Over time, will there be enough funds for each function to be carried out to its fullest? To the extent that there are not enough funds, the design will not be fully realized (or will be over a longer period of time). Having a design in place, however, allows decision makers at all levels of the system to assess the tradeoffs inherent from certain functions' not being carried out to their fullest and enables them to make informed decisions.

Realizing that the design will not be fully realized does not detract from its utility as a guidepost for where the current system must direct itself. The fact remains that if an education system does not know where it wants to go, it will be impossible to get there. So, the primary function this design can play is in giving education planners, strategists, and decision makers a destination toward which they can develop decentralization implementation plans.

Conclusion

This paper makes the claim that if a government chooses to decentralize for the purpose of improving the overall quality of the education system, then it must, among other things, design a high-quality decentralized education system. Moreover, we maintain that without such a design (or the robust thinking that would generate such a design) a high-quality decentralized education system will not be realized. Given that design, one can then begin to develop the implementation plans necessary for the education system to methodically move from its present state toward that high-quality decentralized education system. This transformation will not be easy. It will require a lot of resources, near-constant training and support, steadfast political and social will, and a tremendous amount of ongoing reform support, topics that have been adequately discussed in the literature and therefore are not raised at much length here.

A number of the ideas put forth in this paper are not new. Many decentralization efforts have been guided by a variety of well-reasoned principles, vision statements, and strategic plans. What is new here, we believe, is the way in which these ideas and principles

[30] Just imagine if every student had an e-book (e.g., Amazon Kindle) and the entire curriculum could be downloaded to it. That every student in the country could have access to every textbook germane to the curriculum would radically alter the entire textbook industry.

have been amalgamated into a simple approach that can yield a viable design for a high-quality decentralized education system, or subset thereof, and using that design, guide the overall reform and planning process.

To advance the work presented in this paper, we believe that detailed accounts of efforts made to develop such designs for high-quality decentralized education systems would be invaluable, especially if some of designs are for various subsectors of an education system. Equally important to help advance this work would be detailed accounts of using these designs to either align national policies and laws, develop decentralization implementation plans, or both.

Education decentralization has been going on variously for decades. To date, very few if any of these efforts has been guided by the kind of design put forth in this paper. Our hope is that with such designs in effect, decentralization's record of mixed results—in particular those that relate to high-quality education—will be a bit less mixed. Or if expectedly mixed, that the overall level of performance will be raised over what it had been before decentralization.

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