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The risks to education systems from design mismatch and global isomorphism

Concepts, with examples from India

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Abstract: The incredibly low levels of learning and the generally dysfunctional public sector schooling systems in many (though not all) developing countries are the result of a capability trap (Pritchett et al. 2010). Two phenomena reinforce persistent failure of schooling systems to produce adequate learning outcomes. One is the mismatch between system design—the allocation of activities across organizations and mechanisms of accountability—and the insights of the ‘new institutional economics’ from principal agent models and contract theory. In particular, many education systems attempt to manage teaching and learning as a ‘thin’ or ‘logistical’ activity that can be managed with top-down control and an emphasis on compliance. The reality is that teaching is a ‘thick’ or ‘implementation intensive’ activity that performs better when teachers and operators of schools are given performance standards, have multiple in-depth accountability channels, and are given greater autonomy. The second phenomena that facilitates persistent failure is global isomorphism on enrollment and inputs (Meyer et al. 1977; Boli et al. 1985; Meyer et al. 1997). That is, the field (in the sense of Bourdieu 1993) of global education has produced a near exclusive emphasis on enrollments and duration in school, adequacy of physical inputs, and formal qualifications that allowed, perhaps encouraged, national systems to ignore completely performance on child-learning (of any type, measured in any way). I conclude with a comparison in India of the national governments recent efforts in basic education which have been almost exclusively isomorphic.

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1 Introduction

The intellectually hard question about government produced basic education in South Asia is easily posed: How can it be this awful? That breaks down into two questions. How did it *get* this awful—what were the underlying dynamics that produced the current conditions? How does it *stay* this awful—why are there not effective pressures for improvement?

What is new is the powerful new accumulation of evidence on learning, particularly assessments which can track the learning profiles of student mastery across grades, in Pakistan, Bangladesh, and India which shows how little is learned from year-to-year and how many students complete primary or basic education having gained little.

A recent study using both oral and written assessment of very basic math skills¹ in Bangladesh found that children who had completed only primary school (grade 5) only answered 50.1 per cent of oral questions correctly and 54.6 per cent of written questions correctly (Asadullah and Chaudhury 2013). Those with *no schooling* got 32.8 per cent and 22.2 per cent correct. Hence the incremental gain on the oral math assessment from *five full years* of schooling was only 18 per cent more questions *about primary school curricular content* answered correctly. The implied average annual gain across the oral and written assessments was only 5 percentage points per year.

The LEAPS (Learning and Educational Achievement in Punjab Schools) (2007) study in Pakistan (Andrabi et al. 2007) both assessed learning at various ages and grades but also tracked learning performance of individual children over time from grade 3 to grade 6. They found that 52 per cent could do a simple multiplication problem ($4 \times 32 = ?$) in grade 3 and only 75 per cent of those same children could do it in grade 6—so three additional years of schooling had only helped half of those who had not mastered the skill early to gain this simple competence. Across four simple math questions the average gain was 7 percentage points of the students able to answer correctly per year of schooling.

A large-scale study in the Indian state of Andhra Pradesh was able to produce estimates of gains on a sophisticated IRT (item-response theory) score, tracking the same students from grades 1 to 5. The likelihood of the average child answering a grade 1 curricular mathematics question correctly increases only from 38 per cent in grade 2 to 55 per cent in grade 5—again a gain of only 6 percentage points of the children per year—and ending with just over half completing grade 5 capable of grade 1 content.

The large-scale ASER (Annual Status of Education Report) results in India which assess simple literacy and numeracy of over half a million children each year confirm both the low levels and the slow learning progress across grades. What is worse, at least in India learning appears to be getting *worse* over time as in the latest (ASER 2013) assessment children were less knowledgeable at each grade than their previous cohorts.

My use of these measures of learning is not to suggest that answering questions correctly is the only, or even primary, purpose of education, as education's broad purpose is to prepare children

¹ An oral question was 'Suppose you have Taka 250 in total and a chicken costs Taka 60. How many chickens can you buy? How much money will be left after the purchase?' This was answered correctly by only 46 per cent of the sample of children aged 10 to 18. A written question was 'Suppose Bangladesh has 18 districts and each district has 7 thana. How many thana are there in total in the 18 districts?' This was answered correctly by 41 per cent.

to be successful adults. But by every other measure these schools are failing as well such that government schools are dispiriting, if not downright hostile, environments for children.

Observational studies in five states of India measured the frequency of six ‘child friendly’ teaching practices—not complex pedagogical techniques but simple things like smiling, taking questions, displaying children’s work—and found *no child-friendly practices at all* in 39 per cent of grade 2 and grade 4 classrooms (Bhattacharjea et al. 2011). An India-wide household survey in 2005 found that a child from a poor household had a higher chance of being beaten in school than praised in the previous month (25 per cent versus 20 per cent) (Desai et al.).²

In Pakistan researchers find that not only do students in private schools do much better on academic subjects (mathematics, Urdu, English) but that students in private schools do much better on *civic dispositions*. One idea about the role of government engagement in schooling is that public schools are a means of producing socialization. But in Pakistan students in *government* schools are *less* likely to either have civics knowledge (e.g. recite the national slogan) or civic dispositions (e.g. contribute to government efforts in a crisis). Not surprisingly, children in Pakistan whose main exposure to government has been government schooling are *more* negative about government as a result.

Imagine how frustrating, alienating and humiliating it would be to attend a school day after day knowing that you are learning little or nothing—and no one seems to care—or worse you are abused for it. A study in five Indian states found that only 65 per cent of children enrolled were present on any given day (Bhattacharjea et al. 2011). One in three children enrolled in school and with access chooses not to attend on any given day. In all, only roughly half of students were in attendance on three different school visits, whereas only 2.3 per cent of enrolled students were never present so low attendance is not the consequence of de facto drop-out. (One result of this low attendance is astonishingly low actual class sizes, 27 per cent of grade 4 students in India were in classrooms with less than 10 students.)

Another consequence of the failures of public schools is that parents, even very poor parents, are exercising their option of voting with their feet. Well over half of Indian children in urban areas are in private schools (nearly all with no financial support from the state) and even in rural areas the 2012 ASER report found 28 per cent of rural children in private schools. There has been a similar expansion of private schooling in rural Pakistan.

This brief survey brings us back to the two questions. How did things get so bad? How do they stay so bad? No government ever announced its intention to operate low-quality schools. No parent sends their child to school to not learn. And yet, that is what is happening. Moreover, that conditions for learning and learning outcomes in government schools are awful is by now beyond dispute—and this has now been known for some time. The original PROBE report in the BIMARU states of India was carried out in the mid-1990s and published in 1999 (Probe Team 1999). A report on basic education in 1995 was titled Hope or Despair?—with the contents leaning strongly towards the latter (Warwick and Reimers 1995).

India is a particularly puzzling case, on three levels that rule out frequently invoked explanations.

² The excesses of the bad teachers in India reach tragic-comic proportions. Amartya Sen’s Pratiche Trust (2002) survey of school quality in West Bengal found villagers complaining that their local teacher, even when he was forced to attend by parents physically escorting him to school in the morning, spent the day drinking coffee, reading the newspaper and having the children massage his feet.

One, for more than 60 years India has been an independent state and functioning democracy with a free press, freedom of speech, many political parties, free and fair elections. During most of those years that national government was run by the Congress Party which has been widely regarded as ‘left’ leaning party which has rarely been faulted on the quantity of its pro-poor and pro-social-equality rhetoric. So, while one might explain low quality schools easily as the unresponsiveness of a ‘right’ leaning military autocracy to democratic pressure, in fact India’s progress in both quantity and in the average quality of schooling appear to have been less than say, Indonesia’s, in spite of Indonesia’s being ruled by a single party and single leader from 1966 to 1998.

Second, while *average* quality of basic education is low there is an Indian elite whose education and erudition and sophistication rival those of any country in the world. The Indian Institutes of Technology turn out students who are avidly recruited globally. Three Booker prizes for the best work of fiction in the English language have gone to Indian writers (1997, 2006, 2008). In my own field of economics, even beyond the Nobel Prize winning Amartya Sen, there are scores and scores of Indian economists in the global top universities. Two of India’s founding fathers—Gandhi and Nehru—were not just men of action but both internationally acclaimed thinkers and writers. While not ignoring the obvious class and caste differences, it cannot be said that India culture generally lacks an appreciation of education.

Third, while low teacher salaries are often blamed for the ills of schooling, and while this might be true in some places, this explanation can be easily ruled out in India. Civil service teachers in India make many-fold (often by a factor of 6 to 10) *more* than their private sector or contracted counter-parts. A study in Andhra Pradesh found that the *least* well-paid government teacher in their sample made more than the *best*-paid private sector teacher—public pay was so much higher that not only were the averages different, the distributions didn’t overlap (Muralidharan and Sundararaman 2011). The standard government salary places a teacher well into upper percentiles of the income distribution. This high pay does not seem to induce sufficient to induce even adequate performance (even regular attendance).³

While there are potentially many explanations, I will explore two.

I explore in Section 2 how the modern economics of organizations applies to basic education. I find that the typical ‘top down’ (at the national or provincial level) nature of education systems is completely at odds with the structure of basic education suggested by analysis of its characteristics as a ‘thick’ activity.

In Sections 3 and 4 I examine the role of global isomorphism on enrollment and inputs on emphasizing system expansion to the near complete exclusion of quality.

The final section shows how national reform efforts in India, such as SSA (*Sarva Shiksha Abhiyan*, Education for All Movement) and RTE (right to education) have been dominated by global isomorphism.

³ In fact, a study comparing civil service and contracted teachers in Uttar Pradesh found that students, all else equal, learned *twice as much* per year with a contracted teacher than with a civil service teacher making three times as much (Atherton and Kingdon 2010).

2 Thick versus thin and the economics of the systems of schooling

The anthropologist Clifford Geertz (1973), drawing on Gilbert Ryle, described his ethnographic method as ‘thick description’. Thick description goes beyond the reductionist project of external ‘objective’ description of someone’s behaviour (e.g. ‘Mary threw a stone’) to a characterization of the context within which Mary’s actions make sense to Mary and to those around Mary. Perhaps surprisingly, notions of ‘thick’ and ‘thin’ descriptions of human behaviour are also central to the modern economics of organizations. (As with any important concept, there are a number of word pairs that make similar distinctions: ‘subjective’ versus ‘objective’, ‘soft’ versus ‘hard’ information, ‘unobservable’ versus ‘observable’, ‘tacit’ versus ‘codifiable’, ‘metis’ versus ‘scientific’ knowledge).

At the heart of the modern economic theory of organizations is a principal-agent model in which one agent, the ‘principal’ enters into a contract with another agent, the ‘agent’ and attempts to induce the agent to take those actions which promote the interests of the principal. The key idea of the trade-off between (a) the costliness of making and enforcing formal contracts over the behaviours of agents which includes the cost of observing the ‘true’ state of the world on which the agent acted versus (b) the strength of the linkage between actions agent and the goals of the principal. This basic set-up can be used to analyse not just structures of compensation between one principal (an organization) and many agents, but also the compensation structures for CEOs between the organization and a single agent. Moreover, this model can be used to analyse the *size* of the firm, with the tradeoff between economies of scale and scope from being larger versus the diseconomies of scale from contractual enforcement. This model can also be used to think about the boundaries of the firm—that is the ‘make versus buy’ decision that determines the degree of vertical and horizontal integration.

To cut to the case, the next sections make the argument that teaching that leads to student engagement and learning is a ‘thick’ activity that requires teachers to engage with students day to day (and minute to minute) in ways that are difficult to script in advance and impossible to monitor using ‘thin’ information. The consequence of this is that the typical organization of public schooling around a ministry of education model with civil service teachers that is:

- a) large (absolutely and relative to the scope of the market)
- b) vertically and horizontally integrated (responsible for all of the inputs from curriculum to textbooks to teaching to evaluation)
- c) who engage teachers as civil servants with low performance accountability compensation and manage based exclusively on ‘thin’ information (e.g. formal qualifications)

is *exactly the wrong structure*, in every dimension, for managing teaching and learning.

When comparing either with professional activities that require use of thick information to reach quality performance or with other markets for instruction one observes that the structure is based on:

- a) large numbers of very small units
- b) very narrow boundaries of firms, with arms length and networked relationships for vertical (e.g. acquisition of inputs) and horizontal (e.g. other related tasks) integration of the system around small autonomous units

- c) performance accountability based on long-term observation to utilize ‘thick’ dimension of performance from both hierarchal, peer and client assessment.

Organizational theory is a formalization of the Beatles (hardly original but well phrased): ‘Money cannot buy you love’. Love is not a contractible because it is ‘thick’ not ‘thin’. That is, you cannot pay for love because there the ‘fact’ of whether love had been contractually delivered is not judicable by a third party. This isn’t to say that love doesn’t exist, or isn’t important, or isn’t key to a good marriage, it is just to say that one cannot use either arms length contracts or top-down command and control to produce it.

The question is whether educating children is an activity which can be carried out using only ‘thin’ information or whether essential elements of the process of teaching and learning are ‘thick’ and require responses to conditions that are locally observable and require expertise.

2.1 Size of the typical firm

Contrast two functions that most states have taken on: delivering the mail and educating children. A postal service can operate relying on exclusively thin information. Everything a postal worker needs to do with respect to a package can be encoded into a few bits/bytes of entirely objective information: the address and class of service. Knowing just thin information each worker in a massive hierarchical bureaucratic organization can do their job well. The postman doesn’t need to know whether the letter he/she is delivering is a thank you note to Grandma or a bill.

The economics of scale and scope in co-ordinating the delivery of the post mean that a postal worker in a large organization is enormously more productive than if a single person were to attempt to provide this service alone. The organization of delivering of mail into large organizations operating on processes specified on thin information is not a function of the task being done by the government but by the nature of the task itself. FedEx and UPS and other competitors in delivering packages look organizationally similar to the US Postal Service and while they may (or may not) be more efficient they structurally similar—all three have more than 240,000 employees—and their front-line workers follow similar processes and procedures.

In contrast to delivering the mail, nearly all organizations providing services, especially professional services, are extremely small organizations. The largest law firms in the United States have less than 4,000 lawyers (the largest in all of Latin America has 444). Most dentists have traditionally worked in practices of one or two dentists.⁴ A survey of architects in the USA showed three-quarters worked in practices with five or fewer partners. Occupations or sector (or even products within sectors)⁵ in which the quality of the service provided requires detailed adaptation to a specific case, such that the quality of the service provided is based on information that is complex, difficult to encode, hard for a third party to verify, makes organizations with large numbers of employees very difficult. Hence unless some other positive economies of scale are sufficiently powerful to offset this, organizations will tend to be small,

⁴ A study of ‘economies of scale’ in dentists’ practices in the USA did not have sufficient observations on practices with more than five employees to be able to even examine economies of scale above five.

⁵ For instance Stein (2002) shows that banks change their product lines as they get larger, doing less small business lending, which is contingent on ‘soft’ information. One can also think of segments of sectors, like the difference between low-end ‘fast food’ restaurants which can be very large organizations (through often run as franchises to maintain the incentives of the small units) and high end restaurants in which quality is important, which can only be ‘chained’ (either direct control or franchised) with great difficulty.

with relationships handled without complex and rigid rules or organizational policies (including human resource policies), with performance assessed directly, and/or high powered incentives easier to create (e.g. small business owners).

Table 1: How the importance of ‘thick’ information and economies of scale affect expected organization size

		Extent to which successful creation of value in the activity relies on application by front-line workers of specialized knowledge to difficult to externally observe features of the particular case	
		Thick	Thin
Extent of economies of scale or scope	Small	<p>‘Practices’—small organizations, often owned by professionals as sole proprietors or partners</p> <p>Examples: dentists, architects, lawyers, medical specialists</p>	
	Large	<p>‘Franchises’—large organizations that reap economies of co-ordination in some areas (e.g. marketing) while relying on small units for ‘thick’ aspects of operation</p> <p>Examples: fast food, budget hotels, armies</p>	<p>‘Bureaucracies’—large organizations, owned by large anonymous shareholders or non-profits, nearly all workers on salary</p> <p>Examples: postal services, railroads, automobile producers</p>

Source: Author’s compilation.

A cost of a large size organization is that it becomes more dependent on ‘hard’ information in its produces, policies, and personnel decisions as it is increasingly difficult and costly to convey and utilize ‘soft’ information.⁶ If organization size is exogenous, (or chosen for reasons besides organizational efficiency or efficacy) one can get mismatch between organizational size and the intrinsic nature of the activity: with services that require the extensive utilization of ‘soft’ information being run in large organizations that can only use ‘hard’ information.

Is basic education as a task is more like dentistry or delivering the mail? Or, more specifically, what are the components of a system of basic education and which elements of delivering basic education are like delivering the mail and which elements of delivering basics are like dentistry? That is, if one lists all the tasks that someone needs to carry out for a child to have a successful educational experience some are highly technical and have economies of scale and need to be done infrequently such as the preparation of textbooks and other curricular materials or the development and administration of some learning assessments, some are quintessentially ‘thin’ logistical and require some central co-ordination such as the placement and construction of new buildings, and some require ‘thick’ interactions between an individual teacher and an individual learner.

One comparison of interest is with US private universities that compete against each other for students and faculty in a national market. The best universities in the US have all been around for over 100 years—some nearing 400—and yet all are still extremely small in their undergraduate enrollment, typically between 5,000 and 7,000 undergraduates (when the national pool of all four-year enrollees is 12 million and even if we limit this to other private is 5.1 million). Moreover, of the top 22 universities in America the *largest* private university is Cornell with 14,000 undergraduates and the largest of all (ranked at a tie for 20) is University of

⁶ A literature uses the costs and benefits of size as a positive model to explain the size distribution of firms across sectors or activities assuming that organizations can explicitly choose their size.

California, Berkeley campus. All told the top 22 universities (the top 20 including ties) have only 157,000 students—just 1.2 per cent of all enrollees and even only 3 per cent of the private enrollees. This suggests that, for whatever reason, there is no dynamic that makes the best universities grow over time.

Table 2: Top quality private colleges and universities in the USA are nearly all old and still very small

US news ranking	University	Founded	Undergraduate enrollment	Share of US enrollment in four year degree granting institutions (2009)	
				Total % (12,906,365)	Private % (5,197,108)
Top 5 universities (with ties)					
1	Princeton	1746	5336	0.041	0.103
2	Harvard	1636	6658	0.052	0.128
3	Yale	1701	5405	0.042	0.104
4	Columbia	1751	6068	0.047	0.117
5 (tie)	Stanford	1885	7063	0.055	0.136
5 (tie)	University of Chicago (tie)	1890	5590	0.043	0.108
Total top 22 Universities			157700	1.222	3.034
Top five liberal arts colleges					
1	Williams		2052	0.016	0.039
2	Amherst		1817	0.014	0.035
3	Swarthmore		1552	0.012	0.030
4 (tie)	Bowdoin		1839	0.014	0.035
4 (tie)	Middlebury		2516	0.019	0.048
4 (tie)	Pomona		1607	0.012	0.031

Source: <http://www.usnews.com/education> for rankings, enrollments and dates of founding. For total enrollments in USA http://nces.ed.gov/programs/digest/d11/tables/dt11_196.asp.

And these are universities that typical have graduate degrees and a research focus that might make them even larger than if they only had a teaching mission. If one looks at the top liberal arts colleges, which focus more on undergraduate teaching, they are much smaller. The largest of the top five is Williams College with just over 2,000 students.

The contrast with industries with economies of scale and no diseconomies due to informational and contracting issues in scaling up quality services could not be more stark. The top four banks in America have 39 per cent of customer deposits. The top three internet search engines account for 95 per cent of searches. Even in services that have to be delivered locally and face-to-face but with economies of scale and replicable outlets there is huge concentration, the top ten grocery chains account for 65 per cent of all sales (with Wal-Mart alone capturing 28 per cent of sales).

The size of the units at which elementary (primary plus upper primary) education is managed in India could not present a clearer contrast. In India's federal structure elementary education is a state subject so that each state controls the sector. But most Indian states (though, as with all statements about India there are variations) manages education—from teacher training, hiring, assignment, classroom construction, textbook acquisition, evaluation—at the state level. Not

surprisingly, given that there are a billion people, each Indian state is huge—most much larger than the typical (median) country.

The 14 largest Indian states run systems of elementary education with more 3.5 million students enrolled and over 125,000 teachers. This is more students than a large country like Germany has—and Germany has little national control over primary education but itself has a federal system in which states control education. Sweden relies on local control of schools even though its total enrollment of students is smaller than the twentieth largest Indian state listed. America's *largest* school district—New York City—which is widely considered to be too large to be manageable—has less than a million students total K-12, is smaller than 18 Indian states and the second largest US district, Los Angeles, has less students total K to 12 than Himachal has just in elementary.

Table 3: Total enrollment and number of teachers in elementary education in selected Indian states, contrasted with other countries and with school districts in the USA

State/UT	Total enrollment in elementary education in government schools	Total government teachers
Bihar	20,519,815	347,330
Uttar Pradesh	19,585,396	509,508
West Bengal	13,256,933	449,724
Madhya Pradesh	10,221,216	268,471
Maharashtra	7,231,470	289,067
Rajasthan	7,155,509	266,505
Andhra Pradesh	6,175,060	348,221
Gujarat	5,982,181	206,203
Odisha	5,565,229	205,335
Jharkhand	5,390,338	127,774
Karnataka	4,783,689	228,681
Tamil Nadu	4,226,225	149,868
Assam	4,174,185	145,935
Chattisgarh	3,789,376	161,268
Germany (total Primary, gov't and private)	2,912,938	
Punjab	2,193,899	110,284
Haryana	2,135,714	83,332
Delhi	1,742,738	44,523
Kerala	1,007,249	53,738
New York City Department of Education (All, K-12)	995,336	
Uttarkhand	907,931	44,643
Himachal Pradesh	695,417	17,776
Los Angeles Unified School District (all K-12)	667,273	
Sweden (all primary, gov't and private)	576,299	
Finland (all primary, gov't and private)	160,133	

Sources: DISE State Report Cards 2011 for enrollment and teachers in Indian states, UIS data for Germany and Sweden total enrollment, http://en.wikipedia.org/wiki/List_of_the_largest_school_districts_in_the_United_States_by_enrollment for enrollment in US school districts

These massive system enrollment sizes make the number of teachers employed truly staggering. Returning to the analogy of the large sizes of firms that deliver parcels due to the ability to organize the process using thin information combined with economies of scale due to co-ordination, two of the largest 20 private sector employers in the USA are the Fortune 500 companies United Parcel Service with 310,010 employees and FedEx with 255,573. Seven Indian states employ more teachers at the elementary level than FedEx.

Yet one thing known for absolute certain from the research on the determinants of learning is that, beyond the size of a single modest school, there are no few, if any, economies of scale to the teaching and learning components of schooling systems (that is, as I discuss below there might be economies of scale to producing textbooks or assessments but not to teaching and learning).

This is obvious as in India and Pakistan nearly all of the private entrants to which parents are sending children are ‘mom and pop’ single schools. In the private sector in which size is determined by the trade-off between economies of scale and diseconomies of organizational scale from the management of the ‘thick’ information involved in teaching the single schools compete successfully against both large public and mostly resist consolidation into larger private organizations.

This suggest that the existing extremely large scale at which schooling systems are managed is almost certainly a mismatch relative to the scale at which systems can—and would—operate effectively in the absence of design decisions being driven by forces extraneous to teaching and learning.

2.2 Boundaries of organizations (vertical and horizontal integration)

A second key element of the economics of organizations is to use the structure of information to examine the boundaries of the organization. The key decision is the ‘make versus buy’ decision. What is it that the organization makes itself and what is it that an organization produces using employees under its own control.

The boundaries of the firm have two dimensions:

Vertical—which of the inputs needed in the final product does the firm produce and which does the firm buy from other suppliers?

Horizontal—what is the range of final products that a firm produces?

An organization that produces one product, say a Christian denomination that produces religious services for its parishioners, can decide whether or not to ‘make’ certain inputs or ‘buy’ them. This depends on how reliably the contract can be specified so that the supplier neither ‘holds up’ and extracts too high a price nor provides inputs inappropriate to the purpose.

So a church may need pews for its parishioners to sit on. It is unlikely that the denomination will decide it needs to make its own pews—those can be bought.

The church may need someone to play the organ. While one might have a slight preference for those of its own denomination, this can be contracted out as the organ performance is contractible.

The denomination will need some sermons. This is the core of the religious service that is very difficult to ‘buy’ and is typically regarded as a crucial, if not the only crucial, element of the production of a religious service. The ‘core’ of the organization are those things that cannot be contracted out and hence the decision must be ‘make’ not ‘buy’ for those elements.

How does this apply to basic education? Start with a single child. What does that child need for effective learning?

The first requirement is a teacher. The teacher must:

- Know the goal, what it is the child is to learn,
- Know the subject matter to be taught,
- Have mastery of at least one effective technique for teaching the material,
- Be able to assess whether a student has mastered the material,
- Be motivated to assist the child’s learning.

In addition, the teacher must be supported with:

- Physical facilities adequate to the learning process,
- Instructional materials.

Building from the primordial interaction of child and teacher in the context of elementary education leads to the classification of the seven basic functions that *any* provider must undertake in order to deliver *any* educational or instructional service. In thinking through the allocation of responsibilities for elementary education it is worth keeping in mind that government production of elementary education is a very special case of a broad class of the production of educational or instructional services. That is, this generic description of the learning process applies to the range of instructional settings: a private tutor teaching a language, a firm providing training to its own workers, a firm providing training in vocational skills (e.g. computer training), a surgeon learning a new operation, an athlete learning a sport, a not-for profit elementary school.

A ‘system’ is structured with an allocation of responsibilities across types of organizations, which then can be managed and held accountable for their responsibilities in various ways.

Table 4 illustrates a schematic of possibilities for a country like India that has a five tiered federalism. A specification of the system is a complete allocation (each required function has to be done by some organization) and reasonably unique as effective accountability requires that the organization responsible be clear, and have adequate resources to accomplish their assigned tasks.

In Table 4 vertical integration is represented by an allocation of all responsibilities to a single vertical column. A state-level ministry of education, for instance, could be responsible for all aspects of producing schooling, from the setting of curriculum to the planning of the physical assets by choice of location of schools, to the training of teachers, to the hiring and assignment and supervision of teachers, to the evaluation of performance.

The alternative arrangement is to break the vertical integration links so that the system isn’t ‘top down’ or ‘bottom up’ (everything done by the individual unit) but rather ‘pull apart’—so that functions are done by different organizations at different scales and the pieces are held together by more ‘arms-length’ or repeated contractual or regulatory relationships.

That is, there is no reason why the same organization which produces the curriculum should also be responsible for training teachers should also be responsible for building schools should also be responsible for evaluation.

Table 4: Matrix for allocation of responsibilities across organizational tiers

Broad function (common across all sectors)	Activity (Specific to elementary education)	Responsibility						Front-line Service Provider (public or private)	
		Central	State	District	Block	Village			
						Gram Panchayat	User groups		
Policy design/ standards	Curriculum design Learning achievement standards/goals		Vertical integration with state responsible for all functions in basic education					Vertical integration with each school responsible for all aspects of basic education (from curriculum to monitoring and evaluation)	
Planning	Plans for physical expansion Plans for quality improvement								
Asset creation	Human capital Teacher training Social capital								
	Physical capital School construction								
Operation	Beneficiary selection Choice of students for targeted programmes Promotion of universal enrollment Recurrent expenditures (non-wage) Textbook choice/purchase Learning materials Maintenance Maintenance of school buildings/facilities Personnel Compensation Hiring of teachers Assignment of teachers to specific classes Performance evaluation In-service training Promotion across grades								
Monitoring and evaluation	Monitoring Individual student progress School processes Evaluation Assessment of learning achievement								

Source: Adapted from Pritchett and Pande (2006).

Those who study organizations and systems contrast 'tight' and 'loose' coupling. In a tightly coupled system each individual bit is centrally controlled to achieve benefits of co-ordination of activities across the parts of the organization. In a loosely coupled system each piece of the

system doesn't need to know the details of what other parts of the system are doing in order to carry out their part well. The pioneering contribution in the organizational literature used the example of basic education in the USA as a arch-typical 'loosely coupled' system in which each piece of the system—including schools and classroom teachers—have substantial autonomy.

Numerous examples in education illustrate the potentials of loose coupling. In particular, separating the setting of standards for and assessment of achievement of learning can be completely separated from the actual operation of the school. For instance, the International Baccalaureate (IB) programme provides private or public schools with a rubric, standards, and a means of independent evaluation of student work from the central IB programme while leaving each school free to organize its instruction however they choose and leave teachers completely free to accomplish the learning objectives.

There is no learning objective reason why the operation of schools is ever part of a tightly coupled system. The underlying explanation of why countries arrived at tight coupling has everything to do with the politics of socialization and nothing to do with learning objectives (Pritchett 2013).

James Scott's (1998) *Seeing Like a State* emphasized that many of the 'schemes to improve human condition' fail because they are state-initiated and hence adopt what he calls a 'bureaucratic high modern' approach. An essential component of 'modernization' was in fact the rise of organizations that were organized as Weberian bureaucracies which meant they formally operated on exclusively 'thin' criteria (two of the criteria of Weber's 'ideal' type of bureaucracy are that it operates based on 'rules' and that it takes action based on written records kept as files). An important component of the historical struggle over the control of schooling was making the systems of schools *more* bureaucratic.

The consolidation and centralization of the provision of education into 'bureaucratic high modern' organizations and systems has benefits, but also costs.⁷ Large hierarchical organizations (both public and private) tend to rely on bureaucratic processes and are incapable of explicitly relying on the discretion of their local agents to respond to the full richness and complexity of individual situations. In Scott's terms, less and less is 'visible' to large organizations. Goals are reduced to organizationally visible and controllable.

Centralization and consolidation of the control of schools *potentially* makes some aspects of the process of schooling more 'efficient' and *potentially* can reduce inequalities. However, what is potentially made more efficient are the tasks that are, by their nature, adequately carried out on the thin criteria on which bureaucratic organizations operate. So, for instance, if one is interested exclusively in the construction of a large number of schools in a short amount of time then a programme of school construction using an identical design and model may be a technically efficient approach. For instance, in the 1970s Indonesia build over 60,000 primary schools across the country in five years using a structured top-down programme. As Duflo (2001) has shown, these schools had the desired effect of raising enrollment rates.

However, the consolidation of control of the schooling system into large units makes the management of the thick aspects of a schooling system—the care and concern for learning progress of the individual child in the teacher-child interaction—much more difficult. The organizational pressures are overwhelming to reduce to thick to the same thin treatment as is

⁷ The obvious example in the case of schooling is where the size of the jurisdiction for schooling is chosen on political and ideological grounds with a desire for homogenous nation-state socialization (Pritchett and Viarengo 2013).

given to enrollments and investments in buildings and purchase of inputs like chalk to simply assert that educational quality *is* the organizationally visible: *input* indicators (e.g. physical infrastructure, inputs), the *formal qualifications* of teachers, and *process compliance*.

One aspect of this is the advent of Education Management Information Systems (EMIS) as a tool for managing schooling systems. These EMIS tools attempt to improve the efficiency and efficacy of schooling by allocating resources across areas/districts/schools based on up to date information on which school lacks which element. So if one specifies the inputs—which school has a girl’s toilet? Which classroom has a blackboard? What is the pupil to teacher ratio? Does each child have a textbook?—the resources will translate into learning.

2.3 Thick versus thin and compensation structure

The third area in which the new economics of information has addressed schooling is in the examination of compensation policies.

Principal-agent contracts are said to be ‘high powered’ if the payoff to the agent depends strongly on the observed output of the agent. For instance, piece rate wages for harvesting (e.g. x dollars per bushel of grapes picked) are entirely high powered—and the employer only has to mandate the verification of the output (e.g. that the grapes are not damaged in the process of picking) and can be indifferent about inputs (e.g. how much time it took the worker to pick the grapes). In occupations in which effort is very difficult to observe and profits to the firm is sensitive to worker effort—like used car sales—then high powered contracts will be the norm.

The typical wage contract is both low-powered and under-specified. That is, in a typical employment contract the worker receives the same money wage no matter what happens on outputs. Moreover, the typical employment contract is underspecified—the firm hires and retains the right to specify tasks to worker will engage in, within a broad range, from hour to hour and day to day. The primary recourse for the principal in a typical employment relationship is not changing the wage but separation—letting the worker go if they don’t meet criteria—which are often specified as compliance with firm policy (e.g. attendance) and perhaps measures of output. A typical civil service employment contract is perhaps the ultimate ‘low powered’ contract as, once confirmed in their civil service position their wage is only weakly related to performance and involuntary separation is extremely difficult for the hiring organization.

Work on teacher compensation has used the principal agent model to explore the difficulties of ‘high powered’ compensation on ‘thin’ output criteria (like test scores). An early contribution by Holmstrom and Milgrom (1991) used the example of teachers to illustrate the if there are multiple tasks that an agent is expected to perform, then making compensation ‘high powered’ on just one dimension (e.g. gain in student scores on standardized tests) will create incentives for teachers to change their mix of activities to produce gains on the measured components and downplay other, less measurable, activities. Proposals for integrating output measures, like student test scores, into teacher evaluation and hence compensation in the USA has produced an enormous theoretical and empirical literature in the USA.

The growing consensus is that current compensation and human resource policies for teachers inside ‘bureaucracies’ have two weaknesses.

First, they hire teachers on ‘thin’ criteria like formal degrees and performance on entrance examinations that have little or no connection to subsequent performance. That is, the extent to which the ‘thin’ criteria on which bureaucratic organizations hire (and in a deep sense, have to

hire given the nature of bureaucracies) is related to the actual quality of teachers (assessed in either a ‘thin’ output metric of scores or in ‘thick’ measures of total teacher quality) is near zero. There are teachers that are better at promoting student learning and teachers that are worse at promoting student learning. In US data which has been able to match students to teachers over extended periods, it can be shown this makes enormous difference to not only narrowly measured test score gains (e.g. Rivkin et al. 2005) but also to more broadly measured outcomes like attendance at college, job earnings, etc. (Chetty et al. 2011).

South Asian empirical findings reinforce these findings that the correlation of objectively measured ‘thin’ criteria like formal qualifications or seniority and student outcomes (of any type) is extremely low (e.g. Bhattacharjea et al. 2011). In fact, some studies find that, controlling for other characteristics, some of these correlations have unexpected directions as teachers with more seniority do worse, teachers with education qualifications do worse, teachers with civil service status do worse.

Second, the compensation scheme is ‘zero powered’. That is, most teacher pay is based on strictly ‘thin’ criteria like qualifications or seniority and leaves very little scope for evaluation of teacher performance *of any type* (thin or thick). Again, this is a near necessary consequence of the nature of large, tightly coupled, bureaucracies. Teachers when teachers work in organizations the size of post offices it is very hard for their compensation structure to not look like that of the post office.

The contrast is not between compensation schemes that are zero powered and those which are high powered exclusively on ‘thin’ output metrics. Compensation schemes in organizations that produce high quality services—e.g. architectural firms, law partnership, top universities, medical practices, quality private schools—look like neither of these. All of these recognize that the assessment of the contribution of the individual to the organization depends on many ‘thick’ factors and hence have extended periods of multi-dimensional and subjective evaluation before making decisions about giving job security (e.g. ‘making partner’ or ‘getting tenure’). Compensation after partner is also variable, but on subjective criteria of performance. The difficulty of maintaining these type of ‘thick’ compensation schemes in both retention and compensation may be one factor that makes it difficult to sustain large organizational sizes.

2.4 The fundamental mismatch between teaching and schooling system design

Typically organization size, scope and design is determined by processes intrinsic to the activities in which they engage. This leads to both some commonalities in patterns as organizations engaged in similar activities have functional forces leading to similar features, but also variation as some organizations might go against the grain as a viable strategy for organizational survival. ‘Fields’ (or more crudely, ‘industries’) as collections of organizations end up with a variety of actors of various sizes engaged with other actors in a variety of networked relationships from close to pure arms-length.

But when subjected to survival pressure organizations have to align their internal organizational practices—such as the recruitment, compensation (including retention and promotion), and contracting with outsiders—with their own organizational strategy and the overall field in which they are engaged.

How does this apply to basic education?

First, experiences around the world prove both that it is *possible* to operate schools *both* at the completely local (indeed, single school) level and operate completely centralized systems—and nearly anything in between. There are no appreciable economies of scale in operating a school—as is evidence by the fact that small, stand-alone, schools compete successfully against large schooling organizations, both public and private.

Table 5: Illustration of the fundamental mismatch between activities that involve ‘thick’ information flows and ‘bureaucratic high modern’ organizations

	‘Practices’	‘Franchises’	‘Bureaucracies’
Size of the typical organization (trade off between economies of scale and scope and co-ordination and diseconomies of scale due to transmission of ‘thick’ information)	Small (less than a few hundred professional employees)	Large for some functions, small operators	Up to hundreds of thousands of direct employees
Vertical/horizontal integration and/or tight coupling (on ‘thin’ information) versus ‘loose’ coupling	Little vertical or horizontal integration. Embedded in loosely coupled systems	Tight coupling in some functions, loose in others	Large degrees of vertical and/or horizontal integration, tight coupling
Compensation schemes and human resource policies	Retention and compensation based on ‘thick’ multi-dimensional and long-term evaluation	Mixed	Thin systems with low powered compensation (civil service the extreme with full retention, zero powered pay)
Examples	Doctors, architects, dentists, lawyers		Postal services, private firms with economies of scale/scope
Examples in non-education services by quality tier	<i>High</i> Restaurants, hotels	<i>Medium</i> Fast food, motel chains	<i>Low</i> Food services contractors
Examples in education (when organizational design is not determined by politics)	Universities, nearly all primary or secondary private schools, most non-test prep instruction (e.g. cultural arts, athletics)	Test preparation for ‘thin’ examinations, some pedagogical ‘types’ of education (e.g. Montessori)	Testing services (e.g. ETS), textbook publishing

Source: Author’s compilation.

By the same token systems can be made to work at different scales in a variety of ways. Germany is a federalized system and the Netherlands is a choice-based system and their 2012 PISA average differed by only a 3 points (on a 1 to 1000 scale with OECD student standard deviation of 100). USA is a local system and France is a highly centralized system and on reading and science scores the countries were virtually identical.

Second, the design of an education system is not usefully a debate between polarized opposites such as ‘state’ versus ‘market’ or ‘centralized’ versus ‘decentralized’ but hinges on an allocation of activities across actors. Achieving the ‘right’ level of allocation of autonomy and accountability can be accomplished in a variety of ways. Countries can be very centralized in say, curriculum and assessment, and yet teachers have near complete autonomy in the classroom.

Third, the features of a system need to fit together and the features of an organization in a system have to fit in the field in which the organization is embedded. That is, schools can only be held ‘accountable’ for actions for which they are given clear objectives and for which they

could, in principle, accomplish. Similarly, expanding ‘autonomy’ only makes sense if a corresponding mode of accountability can be established.

This fit issues (organizations in systems and features in organizations) makes it very difficult to assess education interventions one by one—not matter how ‘rigorously’ this is attempted, impossible to predict the overall system impact of reform from adding up individual interventions and non-contextual ‘policy’ advice worthless at least (and perhaps worse than useless). That is, if teachers have zero autonomy or accountability for learning then teacher training may (likely will) fail to produce results—even. But the conclusion that ‘teacher training doesn’t work’ holds only inside of the given conditions of motivation, autonomy and accountability.

Fourth, the issue is not just whether organizations or systems are managed on ‘inputs’ or ‘outputs’ but also on whether the ‘outputs’ and ‘inputs’ are treated as strictly ‘thin’ and how organizations handle the difficulties of ‘thick’ processes in which the information cannot be reduced to ‘contractible’ details. Parts of the process of teaching and learning are ‘thick’ in a way that are difficult, if not impossible, to reduce to ‘thin’ metrics of any type. So while one part of the attempt to bring greater ‘accountability’ into education systems is to emphasize ‘outputs’ (like learning) over ‘inputs’ (like enrollments) and while this is almost certainly can lead to improvements over pure thin management on inputs—most similar organizations (and private schools) are managed with thin outputs but rather using ‘thick’ information on inputs and outputs.

That said, what does this imply about the answer to the questions about South Asian basic education posed at the beginning: ‘How did things get so bad?’ and ‘How do things stay so bad?’ Here is a basic narrative.

Step one. The choice of the state/province as the level of sovereign control over education was decided on purely political grounds as a contestation between national and federal identities (most clearly in India with the realignment of state borders on language lines). This meant the size of the systems to be managed was chosen not on any consideration of what would produce learning but by purely political reasons about control of socialization. This produced control of school systems that, with the inevitable expansion to universal enrollment are enormous relative to any economic rationale. An activity that has (near) zero economies of scale or scope (the operation of a school and teaching in a classroom setting) was embedded in organizations of enormous size—much larger than any developed countries system. For instance, Finland (which has had success recently in improving learning) may well be a ‘national’ model but its total primary enrollment in 2011 was 160,133—making it 1/50th the size of the typical India state, only a large district.

Step two. The adoption of large sizes for the organization of schooling sizes combined with the pro-government and more generally pro-‘modern’ adoption of bureaucratic high modernism that attempted to take the civil service structure (and the army) as an organizational ideal. This meant all aspects of education, from hiring of teachers, to postings, to allocation of budgets, had to be reduced to the thin criteria on which bureaucracies can ‘see’. This was a deliberate and self-conscious displacement of traditional and informal systems that were ‘thick’ and had local roots as these systems were seen as ‘old fashioned’ and ‘undesirable’. This had the unfortunate, if inevitable, consequence of both eliminating local and community feedback into the accountability of the schooling system and of focusing management of schooling systems on features that were thin (see below).

Step three. The organizational mismatch plus disconnection from organic ‘informal’ accountability with parents and communities plus the narrow formulation of goals creates an organization without sufficient internal drive or external support to resist the gradual deterioration of performance from outside pressures. Those within the system with drive for performance gradually lose out to pressures for patronage, corruption of internal controls for hiring and postings, resistance to any external pressures by unions, and process compliance is the only viable mode of operation even for concerned and dedicated teachers and headmasters in the system.

Step four. Once things have gone beyond a critical threshold of dysfunction changing direction becomes difficult because internal support is weak, internal resistance is strong, external allies for performance are weak (in part because many (powerful) parents have abandoned the public system and no longer have a direct stake in its improvement), and the system itself has no reliable measures or metrics of performance against which to judge itself. Things can therefore remain awful for a long time, even as nearly all actors in the system and in society recognize the magnitude of the problem.

3 Global mimicry on enrollments and inputs

Education is a clear example of the operation of the vectors of global isomorphism. That is, how do the ideas and practices adopted in one set of circumstances become the norm adopted in others? The literature on the sociology of organizations describes isomorphic mimicry as an organizational strategy.⁸ This literature discusses three types of mimicry: mimetic, normative, and coercive. *Mimetic* is simply copying through observation. *Normative* is the process whereby approaches are adopted as the desirable norm which are internalized. *Coercive* is when mimicry is essentially forced on other actors as a condition of co-operation. Each of these three pressures for mimicry is in strong operation in the field of education.

While this may not have been a central features in how education in South Asia became and remained of low learning quality, the global isomorphism allowed these countries to receive substantial amounts of external assistance and even support for their efforts in education and created little or no pressure for improvement. This is in part because the external pressures were not for learning performance at all, but nearly exclusively for (a) increased enrollments and (b) expanded inputs. If countries did not demonstrate progress on those two there was external advocacy and encouragement to change, but as long as they could demonstrate progress on these two fronts the ‘international community’ was happy to provide financial assistance and support.

The norm of the universal primary education came into development discussions early. The *UN Declaration of Human Rights* was adopted in December 1948. Article 26 of this declaration states:

(1) Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.

(2) Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote

⁸ Powell and DiMaggio (1983), with an ever-mounting body of evidence and theory accumulating since (e.g., Mahoney and Thelen 2010).

understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace.

(3) Parents have a prior right to choose the kind of education that shall be given to their children.

What is interesting is what if this declaration became powerfully normative and what if this declaration did not gain traction. While this declaration contains broad statement of the purpose of education ('the full development of the human personality') and endorsements of technical and higher education ('equally accessible ... on the basis of merit') and explicitly endorses parental control, if not choice⁹ ('parents have a prior right ...') these gradually eroded in their normative traction to simply put a target on enrollments and school completion.

By the time of the Millennium Declaration, adopted in September 2000 the goal for 'education' had been explicitly reduced in paragraph 19 to a goal on 'schooling'—no specification of its purpose, no suggestion of higher levels, and no mention of parents:

To ensure that, by the same date [2015], children everywhere, boys and girls alike, will be able to complete a full course of primary schooling ...

Contrast this thin goal with the declaration made by educationists in 1990 at Jomtien:

Article 1, paragraph 1: Every person - child, youth and adult - shall be able to benefit from educational opportunities designed to meet their basic learning needs. These needs comprise both essential learning tools (such as literacy, oral expression, numeracy, and problem solving) and the basic learning content (such as knowledge, skills, values, and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning.

Article 3, paragraph 2: For basic education to be equitable, all children, youth, and adults must be given the opportunity to achieve and maintain an acceptable level of learning.

The UNESCO Institute for Statistics (UIS) maintains a website that claims to be the premier source of data on education. Its website claims 'The Data Centre contains over 1,000 types of indicators and raw data on education, literacy, science and technology, culture and communication'.

What indicators are actually available and which frequency gives one an indication of what is regularly measured. I downloaded data from all possible 218 countries for the years 1998 to 2010 (I chose 2010 to not lose data just due to not being up to date). If one looks at data on enrollments in primary schools there is almost complete coverage of some data from all countries in the world. Only three countries lack any data on primary enrollment: North Korea,

⁹ It is difficult to parse the entire text in a way other than endorsing publicly financed school choice in some kind of 'money follows the student' modality (perhaps like the Netherlands). That is the article demands simultaneously that school be 'free' that it be 'compulsory' and that 'parents have a prior right to choose the kind of education'. But obviously if suppliers of schools are to cover their costs they need revenues but for schools to be 'free' to parents these cannot be covered out of fees. But if parents are to have a choice of 'kind' of education there must be alternative suppliers available which requires financial support to a variety of 'kinds' of education. So, strangely, well before Milton Friedman made his 'free markets' case for school choice this was endorsed by the UN General Assembly.

Turkmenistan, and Zimbabwe and only two have only one observation: Somalia and Haiti. Only the truly dysfunctional nation-states of the world do not have easily available data on enrollment. In fact of all possible observations (all 281 countries for all 13 years) only 16 per cent are missing.

This widespread availability of data is similarly true of input indicators. 202 countries in the world have easily available data on pupil-teacher ratios for more than two years in the 1998-2010 period.

Table 6: International pressure for enrollment and input isomorphism due to measurement of *only* enrollments and inputs

Indicator	Percentage of total possible data missing (1998-2010, 218 countries)	Countries with no data at all, 1998-2010	Countries with only one data point, 1998-2010	Countries with two or more observations, 1998-2010
Enrollment in primary school (Table 3B)	16.1	3	2	213
Pupil-teacher ratio in primary school (Table 11)	28.4	13	3	202
Adult literacy (usually self reported and without common definition across countries)	84.9	64	63	91

Source: Data downloaded from stats.uis.unesco.org, November 2013.

However, suppose we wanted a measure of the learning outcomes of the education process—did anyone learn anything in these years of schooling? Of all of the indicators the only one that was even close was a measure of ‘literacy’—but that measure was typically self-reported by the individual or household in a census or survey and completely without comparability across countries. Only 18 countries actually had a measure of literacy based on an actual test or assessment of a specific skill or competency rather than a self-declaration. Even with those very loose definitions of what would constitute a measure of learning, 64 countries lacked even a single observation on literacy 63 more had only one observation over this period 1998-2010. Hence, while ‘two points do not make a trend’ it is even more certain that one point cannot make a trend. There was no ability to track trends or progress as less than half of countries had two or more observations on even this extremely weak indicator of learning.

On more sophisticated measures of learning of the average or typical student many developing countries have no data at all, very few have regular, reliable, reporting on any measures of learning, and few participate in any internationally comparable assessment at all. What learning assessments that do exist, instead of being high stakes for the system and geared to national improvement of schools are high stakes only for the student.

4 Consequences of isomorphism: examples from India

Historically India has been regarded as weak in its commitment to universal enrolment.¹⁰ Amartya Sen has frequently contrasted India and China on their achievement of primary

¹⁰ Myron Weiner.

education and argued that India's weak commitment to schooling was integral to its weaknesses both economically and in advancement in human well-being compared to China.

Yet three recent national reform initiatives have all demonstrated the continued stranglehold the combined bureaucratic high modern system and global isomorphism have produced.

DISE. The District Information System for Education (DISE) is a massive effort to create an EMIS system for India. It, unintentionally perhaps, illustrates perfectly the approach to the EMIS visible. As part of the Government's flagship centrally-sponsored scheme to promote schooling SSA, the DISE has received support to create data that can provide a 'report card' for every state and every district in India. The foreword to the 2011/2012 edition by the Secretary of the Ministry of Human Resource Development claims:

Development of a sound information system is critical for successful monitoring and implementation of any programme, particularly in social sectors. Strengthening the school information system has, therefore, been accorded top priority from the very beginning of the Sarva Shiksha Abhiyan (SSA), as a result of which the coverage of DISE was extended to all states and districts of the country, and its scope extended to the entire elementary stage of education.

The title of the publication of the State Report cards is *Elementary Education in India: Where do we stand?* and the website has the logo: 'DISE 2001: In touch with reality, are you?'

The DISE is not portrayed as just one element but as a system that provides a 'comprehensive' and 'unified' set of statistics for education. In the foreword from the Vice Chancellor of the National University for Education and Planning Administration he claims:

The country has witnessed phenomenal expansion of school education system in recent years. Effective monitoring of such a vast system spread over diverse conditions that characterize different states and regions of the country demands comprehensive data base. NUEPA has been pursuing the goal of creating a reliable system of statistics on school education during the last two decades through the District Information System for Education (DISE) which provides the basis for assessing the progress under SSA and on status of implementation of the Right to Education Act. The importance of this has further increased with efforts to extend the policy of universal education to cover secondary education stage of schooling also. Keeping this in view DISE is making a concerted effort to provide a unified system of school education statistics for all levels of schooling from elementary to higher secondary education.

So what is in the State Report card that will tell us where, for instance, Tamil Nadu stands on elementary education and forms the basis for assessing progress under SSA? Enrollment and inputs—and absolutely nothing else. In the 2011/12 report card for Tamil Nadu I counted 817 distinct pieces of information reported. But of the 817 pieces of information not a single one could be construed as a direct measure of learning of any kind. Lots of inputs that may, or may not, be related to learning are listed. In the section called 'Performance Indicators' there are 24 distinct measures including the 'per cent of schools approachable by all weather road' 'per cent with boundary wall' 'per cent with ramp' 'Pupil teacher ratio'. There was data on teachers by all the usual 'thin' indicators: by gender, by caste, by age, by 'per cent trained', by formal qualification. But 'where do we stand' on learning—of any subject, at any age, measured in any way? Not a single number.

Table 7 provides some clues as to what is going on by comparing DISE data from 2011/12 versus 2004/05 for the state of Tamil Nadu, widely regarded as a ‘leading’ state both in terms of the performance of the bureaucracy and in terms of education. In the seven years between 2005 and 2012 enrollment in government schools has *declined* by 1.2 *million* students, falling from 56.1 per cent of enrollment to only 44.7 per cent by 2011/2012.

At the same time there is no question that the resources made available to expand inputs have in fact expanded inputs. The per cent with drinking water is not 100 per cent, the per cent of schools with girl’s toilets has gone to 75.3 per cent. There is no question that availability of these inputs is better than no availability. Pupil teacher ratios have dropped from 55 to 29.

Table 7: Data from the state report cards taken from EMIS system in India, the district information system for education (DISE) for Tamil Nadu

	Enrollments			Inputs		
	Enrollment in government	Enrollment in private	Percentage in government	Percentage with drinking water	Percentage with girl's toilet	Pupil teacher ratio
2004/05	5,487,221	4,297,171	56.1	79.8	25.4	55
2011/12	4,226,225	5,229,293	44.7	100.0	75.3	29
Gain/loss	-1,260,996	932,122	-11.4	20.2	49.9	-26

Source: State report cards, various years, downloaded from <http://www.dise.in/src.htm>

The idea that an EMIS system on education can tell us ‘where we stand’ without any reference to any learning indicator of any type while tracking to the state and district level dozens of indicators of enrollment and inputs is the essence of isomorphic mimicry on enrollments and inputs. Yet, if these ‘performance indicators’ really indicate ‘performance’ on the most relevant metrics why are less than half of students willing to accept a government school education for free (plus incentives) versus paying their own money for private school—and the government education system has lost almost one in five of its students in the last seven years?

‘Right to education’ In 2009 the Right to Free and Compulsory Education Act was passed into law. One would think, given that as the country was very near universal enrollment in primary school in any case and given the magnitude of the problems with quality of the operation of schools and of the disappointing learning outcomes that had, by 2009, been amply demonstrated, that the Act would focus on learning. Instead it enshrined into law an extraordinarily narrow, input based definition of what constituted an acceptable school and then mandated that *all* schools—including those schools receiving no government support at all—be recognized by the government and lose that recognition unless they met those standards. The ‘norms and standards’ specified in the schedule to the RTE listed just seven items (1) number of teachers to enrollment, (2) building, (3) working days/instructional hours, (4) minimum working hours of teachers, (5) teaching learning equipment, (6) library and (7) play material, games and sports equipment. For instance, under the category of ‘building’ it specifies that seven elements including a ‘playground’ and ‘boundary wall or fencing’ and a ‘kitchen where mid-day meal is cooked in the school’. If a school meets the criteria under those seven heads then, for the purpose of the RTE it is of adequate quality, if not, not.

Again, all of these things are nice to have. But as the data illustrate it is possible to have all of these things and have little or no learning go on inside the school at all. By the same token it is possible to not have some of the things specified in the RTE schedule and operate a school in which children learn more than in schools with those inputs. The existence of the particular thin inputs is neither necessary nor sufficient for learning.

The RTE again represents a completely isomorphic approach to schooling that considers only those elements that are ‘thin’ and hence can be bureaucratically monitored, tracked and, in principle, regulated. But the implementation of the RTE could easily cause schools that are operating at high levels of learning to shut down and force children into schools that meet the narrow definition of the ‘norms and standards’ specified and yet have no effective learning at all.

Sarva Shiksha Abhiyan (SSA). The primary national vehicle for national government promotion of schooling is a centrally sponsored scheme. This scheme had channeled substantial amounts of money into states to allow them to spend more on education. The SSA provides that each state can allocate its resources among the various categories and hence, in principle, create expenditure patterns that reflect local needs. A quick calculation is that in the five years from 2007/08 to 2011/12 SSA spent US\$27 billion.¹¹

Has SSA met its purpose of expanding either the quantity or the quality of schooling in India? No one knows. No one knows for two reasons.

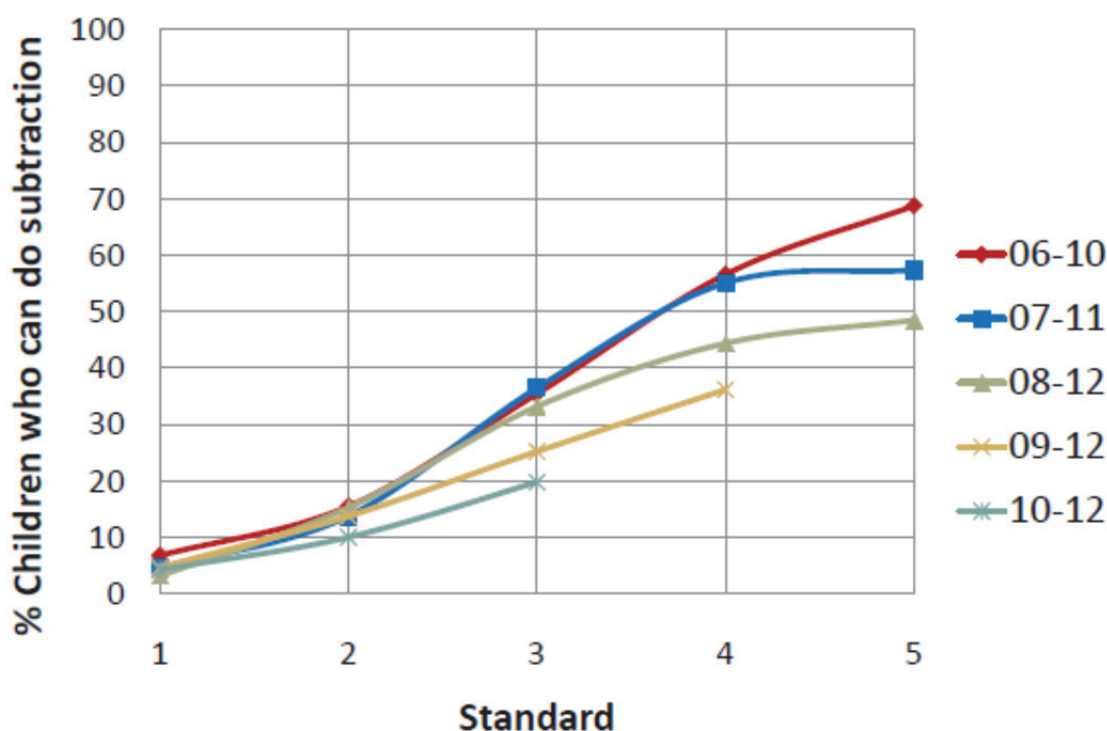
One, while the DISE system does keep track of enrollments and hence one can compare enrollments before and after the advent of SSA this of course does not provide any information about cause and effect. Take the case of Tamil Nadu above where enrollments in government schools *fell* by 1.2 million. Since SSA is spent only on government schools one might draw the conclusion that SSA failed badly. But, it is possible that the fall in government enrollment would have been even greater without SSA. No one knows and it is almost impossible at this stage to know.

Two, SSA has created no regular, reliable reporting mechanisms on learning that could be used to know whether education has improved at all—much less that it improved because of SSA. The data that does exist from civil society organization ASER which carries out assessments of over a half a million children each year suggests that learning performance in India overall is getting substantially *worse*. This deterioration in learning is, of course, hotly disputed by advocates of SSA. However, there is no other data that is regular and reliable over time to dispute.

The SSA programme was built on the assumptions that expansion of enrollments and inputs in a more or less unchanged system for government education in India would produce not just higher enrollments (as enrollment was already at or near universal in many states before SSA) but higher quality schooling. However, these assumptions were so engrained in the isomorphism of education planners that this became circular. If the inputs were provided then the school quality *was* higher because the *definition* of quality was higher inputs. By not acknowledging the need for (indeed challenging the notion that learning should be measured) measures of learning SSA was able to provide a situation in which there could not possibly be proof that SSA failed as if it isn’t measured in a way the government is forced to accept as valid then it simply cannot be known.

¹¹ This is using expenditure, not allocations, data from http://www.academia.edu/2948921/Sarva_Shiksha_Abhiyan_SSA_2013-14 for those years and translating into dollars at the rates report by financial year by the Reserve Bank of India.

Figure 1: All India: % children who can do a 2 digit subtraction: successive cohorts



Note: Each successive cohort of children in India is less likely to be able to do simple subtraction at the same grade—standard 4 children are almost 20 percentage points less likely to be able to do subtraction in 2012 than standard 4 children in 2009

Source: ASER 2013 report.

5 Conclusion

India and other South Asian countries are deep into a learning crisis. Their public sector systems are failing to produce children anywhere near ready for the twenty-first century. I argue that two of the possible explanations of this state of affairs are that (a) the mismatch between the system design that could produce effective schooling organizations and the actual design of the system and (b) that external pressures have been for enrollment and input isomorphism that simply assumes achieving forms and thin inputs can produce the desired outcomes. This ideology is deeply embedded into the major reform efforts of the national government of India as reflected in the Right to Education Act, the design, implementation, monitoring and evaluation of SSA and the data collected in DISE. There is no evidence to date that this approach can, or will, improve the most important aspects of the schooling experience or the learning outcomes of Indian children.

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