

PAKISTAN

LEARNING AND EDUCATIONAL ACHIEVEMENTS IN PUNJAB SCHOOLS (LEAPS)



Insights to inform the education policy debate

PAKISTAN

Learning and Educational Achievements in Punjab Schools (LEAPS): *Insights to inform the education policy debate*

February 20, 2007

Tahir Andrabi, Jishnu Das, Asim Ijaz Khwaja, Tara Vishwanath,
Tristan Zajonc¹

And

The LEAPS Team

¹ The authors' affiliations are (in order): Andrabi: Pomona College, Das: The World Bank and Centre for Policy Research (New Delhi), Khwaja: Harvard University, Vishwanath: The World Bank and Zajonc: Harvard University. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the view of the World Bank, its Executive Directors, or the countries they represent.

EXECUTIVE SUMMARY

1. *There have been dramatic changes in the educational landscape of Pakistan in the new millennium.* Enrollments are starting to look up with a 10 percentage point jump in net enrollments between 2001 and 2005. In addition, secular, co-educational and for-profit private schools have become a widespread presence in both urban and rural areas. Between 2000 and 2005, the number of private schools increased from 32,000 to 47,000 and by the end of 2005, one in every 3 enrolled children at the primary level was studying in a private school.

2. *These changes represent an opportunity and a challenge for educational policy in the country.* A large fraction of rural Pakistani households no longer lives in a village with one or two government schools—half the population of rural Punjab, for instance, lives in villages where parents routinely have 7-8 schools to choose from. This new educational landscape is best described as an *active educational marketplace* with multiple schools vying for students whose parents are actively making educational decisions. From evaluating policy reform to understanding how the private sector can help educate the poor, the rise of such schools represents a significant opportunity and challenge, not only in Pakistan but also in the wider South-Asian context.

3. *Furthermore, with enrollments looking up, debate will likely shift to what children are learning in school.* Enrollment does not imply learning. Low-income countries routinely place at the bottom of the charts in international comparisons. Measuring what children are learning in public and private schools and understanding how the educational marketplace can foster learning is a first step towards formulating policy in the new millennium.

4. *This report shares the findings of first round of the Learning and Educational Achievement in Punjab Schools (LEAPS) survey carried out in all the public and private schools offering primary-level education in 112 villages of the province.* This survey includes learning outcomes for 12,000 children in Class III in Urdu, English and Mathematics together with detailed information on the beliefs and behavior of schools, teachers and parents. This large and independent exercise provides critical information on every aspect of the educational

Figure 1: Testing Children as part of the LEAPS project



marketplace, including performance of all types of schools in select districts of the province. This report presents findings from the first round of the survey in 2003 along with trends for a few key outcomes between 2003 and 2007; a further report will incorporate all other information from the 4 rounds collected between 2003 and 2007.

5. *The findings shed light on the relative strengths and weaknesses of private and government schooling.* Driven by higher teacher salaries, government schools require twice the resources to educate a child compared to private schools. Furthermore, children studying in private schools report higher test-scores in all subjects—partly because their teachers exert greater effort. Private schooling alone, however, cannot be the solution. Access to private schools is not universal. Private schools choose to locate in richer villages and richer settlements within villages, limiting access for poor households. In contrast, a laudable feature of the government school system is that it ensures equal geographical access to schools for all. Since children who receive less attention and educational investments at home are also more likely to be enrolled in government schools (if they are enrolled at all), government school reform could ensure that no child is left behind.

6. *Based on these findings, the report proposes a modified role of the government for discussion.* This modified role envisions the government as complementary to, rather than in competition with, the private sector. It advances three spheres for government intervention. The first is as a *provider* of information on the quality of every school—public or private—in the country. This will enable households to make informed decisions and increase beneficial competition between schools. The second is as an *actor* who corrects the imbalances arising from unequal geographical access to private schools and ensures that all children acquire a set of basic competencies. Inevitably, this requires reform of government teacher hiring and compensation schemes. The third is as an *innovator* willing to experiment with and evaluate “out-of-the-box” reforms such as public-private partnerships where financial support is given to children regardless of the school chosen. Moving from such proposals to operational feasibility requires debate and discussion, both on the proposals presented here and to better understand the concrete steps that such a transition might require.

I. CHALLENGES FACING THE EDUCATION SYSTEM IN PAKISTAN

7. *Enrollment.* Educational outcomes in Pakistan have traditionally been poor. The adult literacy rate is 50 percent compared to a 58 percent average for the entire South Asian region. Similarly, the primary school net enrollment for 2004 at 61 percent was lower than comparator countries in the same region: Sri Lanka (97 percent), India (90 percent), and Nepal (78 percent).² Recent enrollment data, however, suggest grounds for optimism. In a space of four years (2001-2005), *net* national enrollment jumped 10 percentage points, from 51 to 61 percent. The highest increase occurred in Punjab province (12 percentage points), followed by Sindh and NWFP provinces (7 percentage points), and Balochistan province (4 percentage points). Enrollment rates in urban and rural areas increased and for both boys and girls— for example, girls in rural Punjab and NWFP registered enrollment growths of 14 and 10 percentage points respectively. Participation in schooling is finally looking up.

Table 1: What do Children Know in Mathematics

The Question	Percentage who answered correctly	Corresponding Class for Curriculum
4 + 6	89	K & I
36 + 61	86	K & I
8 – 3	65	K & I
5 x 4	59	II
238 - 129	32	II
Read and Write the time (Clock shows 3:40)	24	II
384 ÷ 6	19	III
4 x 32	50	III
Fractions: $\frac{1}{2} + \frac{3}{2}$	19	III
Read a diagram of a scale to answer which part is heavier	12	III
Fractions: $\frac{7}{5} - \frac{3}{4}$	1	IV

8. *Learning outcomes.* As enrollment numbers improve, increasing attention is being paid to what children are learning; in the near future, it is likely that this will become the defining issue about education in the country. The Learning and Educational Achievement in Punjab Schools (LEAPS) survey results show that children perform significantly below curricular standards for common subjects and concepts at their grade-level. By the end of Class III, just over

50 percent of children have mastered the Mathematics curriculum for Class I (Table 1). They can add double-digit numbers and subtract single-digit numbers but they cannot subtract double-digit numbers or tell the time. Both multiplication and division skills have not solidified and advanced topics such as fractions are beyond all but the best students. In Urdu, they cannot form a sentence with the word “school” or the word “beautiful” and less than 20 percent are able to comprehend a simple paragraph. If by the end of Class III, a child could read a sentence in Urdu, recognize simple words in English, and perform standard arithmetic operations of 3-digit addition and subtraction, it would mark a huge improvement over the current scenario. For children who have either never attended school or have dropped out by Class III (40 percent of boys and 50 percent of girls), this is the maximum they will have learnt through the formal schooling system.

² World Development Indicators (2006)

Box 1: Learning across the South Asia region: Is Poor Learning in Pakistan an Exception?

Recent testing exercises in low-income countries show that learning levels are far below international standards, and that they have little or nothing to do with the curriculum designed for the Grade level. The results from the LEAPS study show that children tested for Mathematics in Pakistan fall in the middle of the spectrum of children tested in Mathematics in 29 Indian states according to the Annual State of Education Report released by Pratham in 2005. In a comparable division problem, for instance, the tested children ranked ahead of 19 states out of 29—below West Bengal, Kerala and Haryana but above Andhra Pradesh, Punjab and Gujarat.

II. THE CURRENT EDUCATIONAL LANDSCAPE

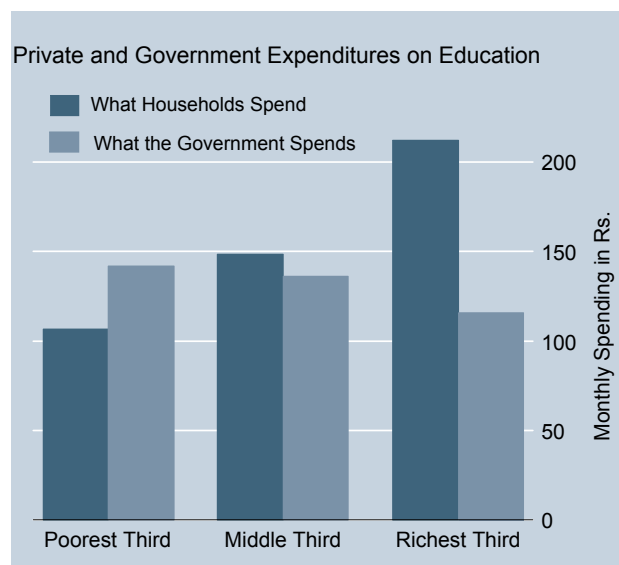
9. *The educational marketplace is expanding.* The emerging reality of Pakistan, both urban and rural, is that there is a well-defined *educational marketplace* at the primary level with actively engaged players on both sides of the market—the schools and the parents. The one-school village (two if gender segregated) has given way to a selection among public and private schools (religious schools are rarely used with the percentage of children enrolled in such schools stagnant at 1-3 percent of enrollment countrywide). The “education story” in Pakistan is the rise of an active and competitive educational marketplace where self-owned, for-profit private schools offering secular education provide parents another option for investing in their children’s education.

10. *The number of private schools has increased dramatically since the 1990s.* Between 2000 and 2005 the number of private schools increased from 32,000 to 47,000. Since 1995, one-half of all new private schools have set up in rural areas and they are increasingly located in villages with worse socioeconomic indicators. Enrollment in private schools increased dramatically between 2001 and 2005 and by 2005, one out of every three enrolled child was studying in a private school. Although the government remains the largest provider of education, this report shows that government schools—despite being staffed with better-educated and better-paid teachers—are now competing for the same segment of students, even in rural areas.

11. *The average rural private school is affordable.* In a nationwide census of private schools in 2000, the fee in the median rural private school (50 percent of all private schools charge lower fees) was Rs.60 per month. According to household survey data from the Pakistan Integrated Household Survey (PIHS 2001), 18 percent of the poorest third sent their children to private schools in villages where they existed.

12. *Households have emerged as significant investors in their children's education.* Out-of-pocket spending by households on children's education is higher than what the government spends on providing education through public schools for the richest one-third of the rural LEAPS household sample, and is roughly equal for the middle third (Figure 2). Even among the poorest one-third of households, out-of-pocket expenditures, at Rs.100 per month, amounts to 75 percent of government educational spending on this group. Across the board, more than one-half of children's educational expenditures are now borne by parents. Even though government schooling is a free option, poor parents are spending substantially on their children's education, both by enrolling their children in private schools and spending on additional educational investments beyond school fees.

Figure 2: Even the poorest households bear a large share of the cost of educating their children



Even though government schooling is a free option, poor parents are spending substantially on their children's education, both by enrolling their children in private schools and spending on additional educational investments beyond school fees.

III. THE LEARNING AND EDUCATIONAL ATTAINMENT IN PUNJAB SCHOOLS (LEAPS) SURVEY

13. *The LEAPS surveys, initiated in 2003, were conducted in 112 villages in Punjab province.* Following an accepted geographical stratification of the province into North, Center and South, these villages were located in the 3 districts of Attock (North), Faisalabad (center), and Rahim Yar Khan (South). Villages were randomly chosen from a list of villages *with at least one private school* according to the 2000 census of private schools. The survey team worked with all schools offering primary level education as well as a sample of households in each village. The survey covered 812 government and private schools, 12,000 students (in 2003), 5,000 teachers and 2,000 households.

14. *The LEAPS study design responds to three critical needs.* First, it responds to the current informational void on what children are learning in Pakistani schools by testing children in English, Mathematics and Urdu. Second, it provides insights into the child's complete educational environment by collecting information on schools, teachers, and households. Finally, the report is forward looking in that it examines the structure of educational decisions and outcomes in villages with private schools. At the time of the LEAPS survey in 2003, close to 50 percent of the rural population of Punjab lived in villages with private schools. The

exponential growth in private schools in the new millennium from 32,000 in 2000 to 47,000 in 2005 implies that the future we envisaged in 2003 is now the present for most of rural Punjab.

15. *The sampling strategy provides a valuable opportunity to contextualize the relative strengths and weaknesses of government vis-à-vis private schools within the larger educational environment.* Given little *de jure* variations in the way government schools operate (and in the case of teachers, little *de facto* variation as well), private schools provide an alternate system of educational provision to which government provision can be compared. Including systematic information about rural private schools—where one-third of all enrolled children are currently studying—as well as data from households and all the schools in these villages brings the educational marketplace in its entirety into better focus.

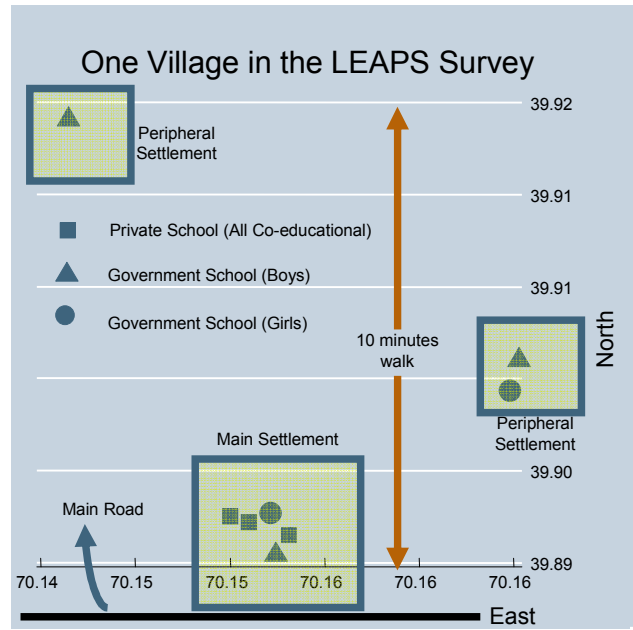
16. *Although the findings of this report are from data on 3 districts in rural Punjab, the analysis and policy ideas raised are relevant for a wider population.* Both Punjab and NWFP have seen dramatic increases in private schooling since the mid-nineties. In addition, the geographical expansion of private schools means that the educational landscape described here will become relevant for a greater fraction of Pakistani villages over the next 10 years. While rural Sindh and Balochistan are currently different and need to be treated as such, many Pakistani households already live in the kinds of villages studied here—and their numbers will only increase over time. Beyond Pakistan, India, Bangladesh and Nepal have all seen an increase in private schooling over the last decade. The issues discussed here are likely as relevant for this wider group.

17. *The LEAPS report advances evidence based discussion and policy.* It is important to stress that whether the debate is over private schools or reform in government schools, we do not, by choice, go beyond what the data can tell us. Our reading of the education discussion in Pakistan is that the views expressed and stands taken are seldom supported by a systematic look at the data, albeit in many cases because the data are just not available. In our view, this report will have served its purpose if these data from households and schools informs the debate on education in the country.

IV. THE EDUCATIONAL MARKETPLACE

18. *The typical village in the sample had 8 schools.* To provide a sense of what we mean by the “educational marketplace,” Figure 3 plots the geographical locations of schools in a single village. In this village, 5 schools—three co-educational private, one government boys’ and one government girls’—are within 50-100 meters of each other. Apart from this cluster, there are two government schools (one boys’ and one girls’ north of the village) and a third government school (boys’) to the east. The cluster of schools is located in the main settlement while the two schools in the north and the third in the far-east each cater to smaller, separate settlements. This is a typical village configuration—the LEAPS survey located 812 schools catering to the primary level in the 112 sampled villages for an average of close to 8 schools in every village.

Figure 3: A typical village in the LEAPS survey has 5-8 government and private schools, many located in a main settlement and some in peripheral settlements—the latter mostly government schools

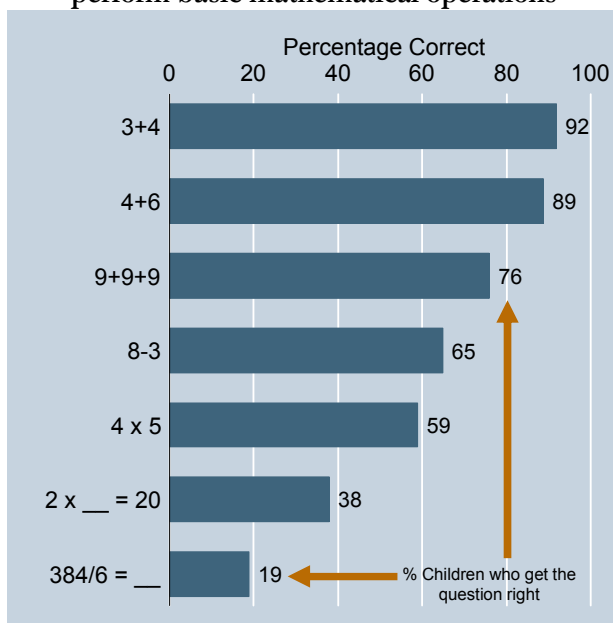


19. This village raises some immediate questions. How different are schools in the same village—in terms of their test-scores, infrastructure, teachers and costs? How do households choose what schools to send their children to and how much to spend on them? The LEAPS report provides information on these important questions; here, we summarize some of the salient findings of the report focusing on the public-private differences. We start with learning outcomes, then look at school infrastructure, the schooling market, teachers and the demand for schooling in terms of parental knowledge and action.

Facts about learning in a nutshell: Learning outcomes are poor. They have little to do with where you live, and everything to do with whether you go to a public or private school. The differences between public and private schools are so large that it will take government school students between 1.5 to 2.5 years of additional schooling to catch up to where private school students were in Class 3. It also costs less to educate a child in a private school. Putting learning and cost differences together, the quality-adjusted-cost in government schools is three times higher than in private schools.

20. *Children are learning very little in school.* It is worth reiterating that children are learning little relative to what is expected of them in the curriculum and relative to what they need to function in a fast globalizing world. Children who never attended school or leave after Class III will be functionally illiterate and innumerate. They will not be able to perform basic mathematical operations—while 90 percent will know how to add single-digit numbers, only 65 percent can subtract single-digit numbers and 19 percent can divide a 3-digit by a single-digit number (Figure 4). They will not be able to write simple sentences in Urdu—only 31 percent can use the word “school” in a sentence. They will not be able to recognize simple words in English.

Figure 4: Children at the end of Class III cannot perform basic mathematical operations



21. *Learning outcomes are very similar in poor/rich and less/more literate villages.* Although learning outcomes in rural Punjab are poor on the average, there is wide variation--some children scored 0 in the LEAPS tests and some children scored 100. Unlike enrollment, where richer and more literate villages are also more likely to have children in schools, village attributes have almost nothing to do with learning outcomes. Instead, most of the variation in learning is explained by differences across schools *in the same village*—and a large portion of this is due to differences across public and private schools.

Figure 5a: Children in government schools take 1.5 (Mathematics) to 2.5 (English) additional years of schooling to catch up with Class 3 children in private schools

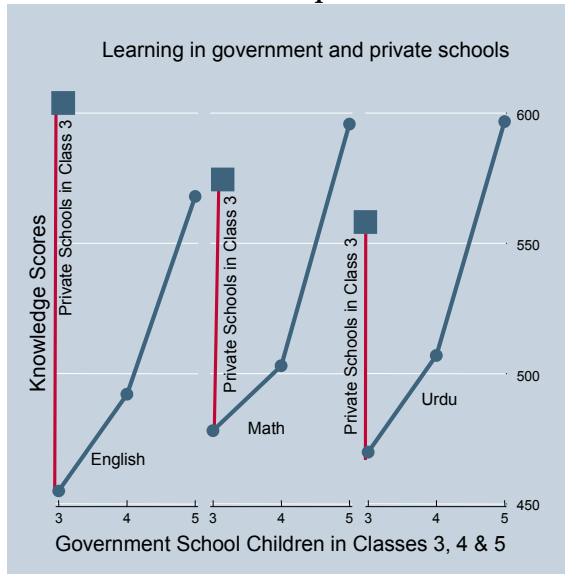
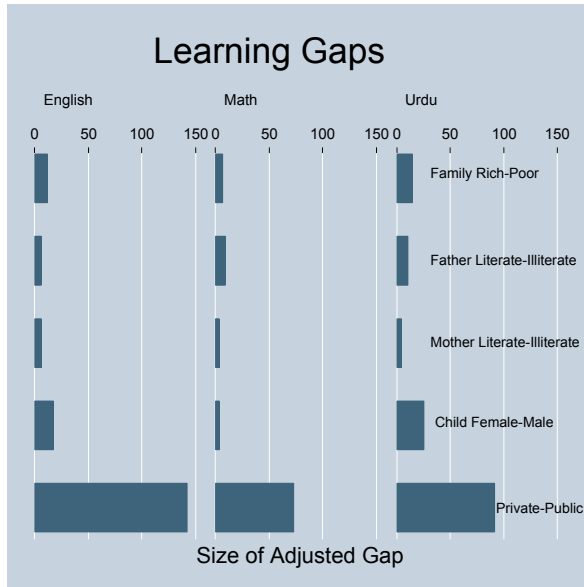


Table 5b: The gap between private and public schools is 8 to 18 times the gap between socioeconomic backgrounds



22. *The public-private schooling gap is large.* Children in private schools score significantly higher than those in government schools, even when they are from the same village. To understand how large these public-private differences are, Figure 5b shows the difference in knowledge scores between children in public and private schools. As a rough guide, a knowledge score difference of 150 points translates into an increase in the ranking of the child from 50th to 85th out of 100 children; a knowledge score difference of 300 increases rankings from 50th to 97th out of 100.³ The knowledge scores of children in private schools are between 76 (Urdu) to 149 (English) units higher than those in government schools. Children in government schools will be among the *worst* performing 20 percent in private schools in English, and the worst performing 30 percent in Urdu.

23. *Children in public schools will take 1.5-2.5 years to catch up to private school children in Class 3.* To understand the size of the public-private gap in test-scores, Figure 5a also shows how long it takes for the *same* public school children who were tested in Class III and followed through to Class V to “catch-up” For all three subjects, children in public schools will report the same test scores as children in private schools after 1.5-2.5 additional years of learning. In English, government school children in Class V have still not caught up with

³ Following international testing protocols, test-scores are transformed into “knowledge scores” and reported in standard deviations in a distribution with mean 500 and standard deviation 150. As described in Chapter 1 “knowledge scores” correctly account for the different difficulties of test questions in computing an overall score. The details of the test and the procedures used are presented in the Technical Appendix of the report.

private school children in Class III. Even in Urdu, an additional 1.5 years of schooling is required before government school children catch up with their counterparts in private schools.

24. *The public-private learning gap is much larger than that across children from different socioeconomic backgrounds.* Another way to benchmark the private-public gap in learning is to compare it to differences across widely emphasized parental dimensions, such as parental literacy and wealth. The gap between public and private schools in English is 12 times that between rich and poor children. The gap between public and private schools in Mathematics is 8 times that between children with literate and illiterate fathers. The gap between public and private schools in Urdu is 18 times the gap between children with literate and illiterate mothers (Figure 5b).⁴

25. *Educating a child in a public school costs twice as much as in a private school.* Are test scores in private schools higher because they use more resources, or, put another way, are children in government schools learning less because there is no money? The overall cost of educating a child in the median rural private school was Rs.1000 or \$15 a year—one month’s fee is roughly the equivalent of one day’s wage for an unskilled laborer. As it turns out, educating a child in a public school costs society *twice as much*—at Rs.2000 a year—as a private school. Looking at the quality-adjusted cost of private schools, education in the public sector is three times more expensive than the private sector. For every Rs.1 that a private school spends on an extra percent correct on a test, the public system spends Rs.3.

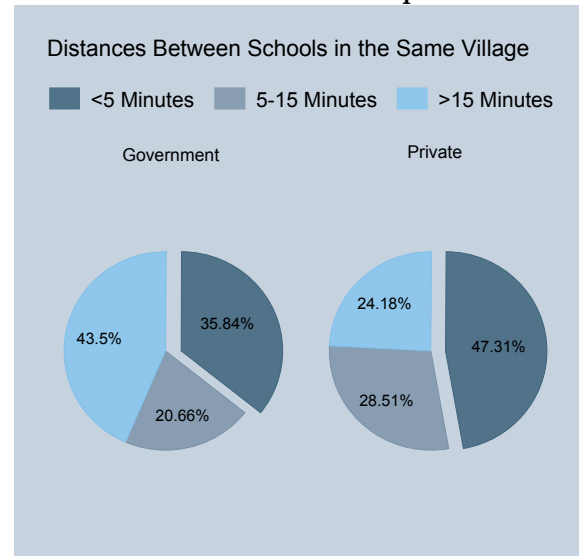
26. *In addition to higher test-scores, parental satisfaction with private schools is also higher.* When asked about teaching skills of government and private teachers, parents ranked 45 percent of government school teachers “above average” or “excellent” compared to 60 percent in private schools. When asked to rank all the schools in the village, parents were 26 percentage points *less* likely to rate a government school as “good” or “excellent” compared to their private counterparts. Whether we look at test scores, costs or parental satisfaction, private schools look a whole lot better.

⁴ Because wealthier children are more likely to be in private schools, the socioeconomic gaps control for the school that the child is in as well as other relevant household and child attributes. Similarly, because private schools have richer children, the public-private gap controls for the household and child attributes of children. In Chapter 1 we also show that public-private differences are *not* due to differences in the student body—either observable or unobservable. In terms of observable differences the raw gap between public and private schools is reduced by *at most 20 percent*, with a rich set of school, child and household controls.

Facts about schools in a nutshell: Private schools are located in intensely competitive schooling clusters. The need to keep fees low implies that profits are low: The median private school's profits are equivalent to the salary of a male teacher. Moreover, private schools compete on other dimensions than learning. Consequently, facilities in private schools are better than in government schools.

27. *Private schools are located in intensely competitive schooling clusters.* The geographical clustering patterns evident in Figure 3 extend to the wider LEAPS data from 112 villages. The average private school in the LEAPS data is located such that close to *half* of all other schools in the village are within a 5-minute walk, and less than a third are more than a 15-minute walk away. With 8 schools in every village, the average private school has close to 4 schools surrounding it. Government schools tend to be less clustered, with just over a third of all schools in a village within a 5-minute walking distance of the average school.

Figure 6: Nearly half of all schools in a village are within a 5-minute walk of a private school.

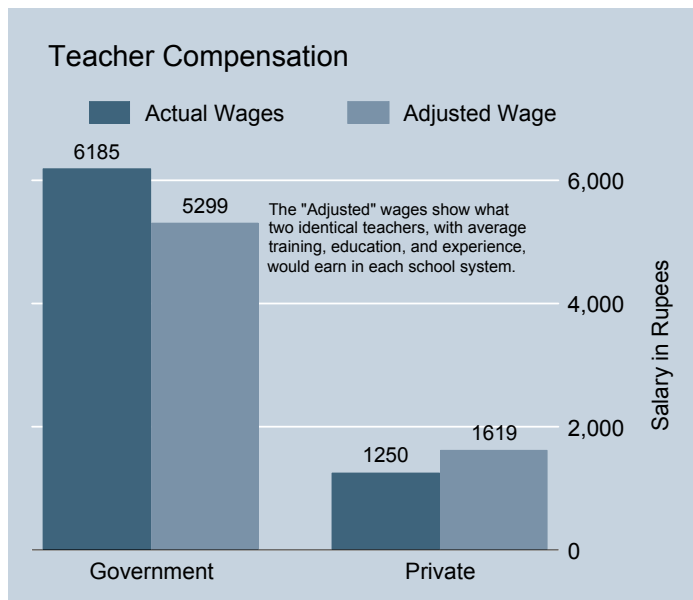


28. *One consequence is that private school profits are low.* A detailed cost and revenue accounting exercise with private schools showed that the median profit of a private school is Rs.14000 a year. This is equivalent to the salary of a male teacher in a private school. Another way of looking at it is the principal of the private sector could earn exactly this amount by teaching in another school—profits lower than this would imply that in monetary terms, the principal would be better off by shutting down the school.

29. *A second consequence is that private schools have lower student-teacher ratios and better infrastructure than government schools.* Prior to looking at private-public differences, it is worth noting that basic facilities in the LEAPS sample schools, including government schools, are not “dismal”—they have classrooms and blackboards, although seating arrangements and the availability of toilets is troubling. Slightly more than a one-quarter of schools have no toilet facilities and even in schools with such facilities, there are 74 children to every toilet. Comparing private to public schools, the typical private school has almost one-half the student-teacher ratio and significantly better facilities than the typical government school—cost savings in private schools are not because they are skimping on *other* aspects of a child's education.

Facts about teachers in a nutshell: Cost-savings in the private schools arise because government teachers' salaries are 5-6 times higher. There are weaknesses and strengths in both sectors. The relative strengths of the government sector are a better educated and trained workforce that is equitably distributed. The relative strengths of the private sector are the ability to cut costs by paying teachers according to local conditions and performance and eliciting higher levels of effort from their teachers.

Figure 7: Government teachers wages are 3 times as much private school teachers...after adjusting for differences in age, education, training and experience



30. *Teachers in the public sector are paid 5 times more than teachers in the private sector.* If private schools are producing better test scores *and* are cheaper *and* provide better infrastructure, where are the cost savings coming from? Given that 98 percent of a private school's costs stem from teachers' salaries, it is not surprising that most cost-savings arise from how much teachers are paid. As Figure 7 shows, only a small bit of this huge wage premium is due to differences in teacher characteristics (and this is *before* a 2007 pay increase for public school teachers). Starting from this wage difference, several characteristics of public and private teachers are worth highlighting.

31. *Teachers in the public sector look better in terms of their qualifications.* Teachers in government schools are more educated, more experienced and better trained than private school teachers. Moreover, they are equitably allocated across rich and poor villages and across schools with rich and poor students.

32. *Compensation for teachers in the government sector focuses on inputs and in the private sector on outcomes.* Teachers in government schools are hired based on education and training and compensation is mostly driven by age, experience, and training—it has little to do with effort or actual performance on the job. In the private sector, teachers are paid more when they exert greater effort and produce better outcomes. Not surprisingly effort, as evident from higher absenteeism rates, is lower in government schools. The test scores of children in

private schools suggest that less-educated teachers making greater effort can outperform more educated and better trained government teachers.

33. *Compensation for teachers in the government sector is unrelated to local labor market conditions.* Teacher salaries for government schools are the same in villages with a large number of unemployed graduates and villages where there are no other educated people for miles. While this is understandable, maybe to attract teachers to remote areas under the “education for all” mandate, it means that the flexibility to pay according to local labor market conditions vanishes. In contrast, compensation in the private sector reflects the alternative employment opportunities of the teacher in the wider labor market. As a consequence, women and those who reside locally are paid less.

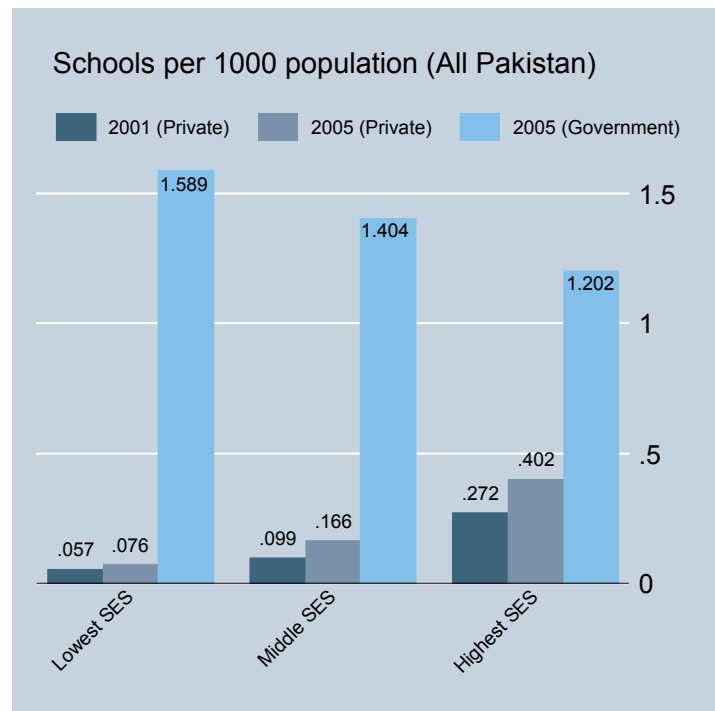
34. *The higher qualifications of government school teachers combined with their lower effort defines the tragedy of government schools.* As one reviewer of this report puts it: “*The question really is how we free up the resources represented by those government teachers who do not teach. The loss here is doubly tragic both because it is money down the drain and because the government actually hires those who have the training needed to be the best teachers. The only reason the private schools look so good is that the poorly performing public schools are so disastrous: if at some future date, children actually start demanding something more than the most rudimentary education, the semi-educated teachers in the private schools would actually find it hard to cope.*”

Facts about the constraints to private schooling in a nutshell: Private schools are overwhelmingly located in richer villages, while government schools ensure equitable geographical access for all income levels. Within villages, private schools are located in central and richer settlements. The main constraint on private schools is the availability of an educated (female) workforce. Private schools do not arise in a vacuum: government investment in girls' secondary schooling during the 1980s probably paved the way for private schools today.

Are private schools then a unilaterally better option? No—because private schools are not everywhere.

35. *Private schools tend to cluster in richer communities.* Access to private schools is highly uneven. Data from the National Education Census (NEC, 2005) show that private schools are primarily located in the provinces of Punjab, NWFP and urban Sindh; in rural Sindh and Balochistan their numbers are low and growth rates are slower. Even within provinces, private schools tend to cluster in richer communities. Public schools remain the only option among villages in the lowest one-third of the socioeconomic status (SES) of Pakistani villages—in fact, there are more public schools relative to the population in villages with poorer socioeconomic indicators (Figure 7). The public sector does a much better job at ensuring that poor people have geographical access to schools.

Figure 8: There are more public schools per 1000 population in villages with poorer socioeconomic status...private sector location patterns are the opposite

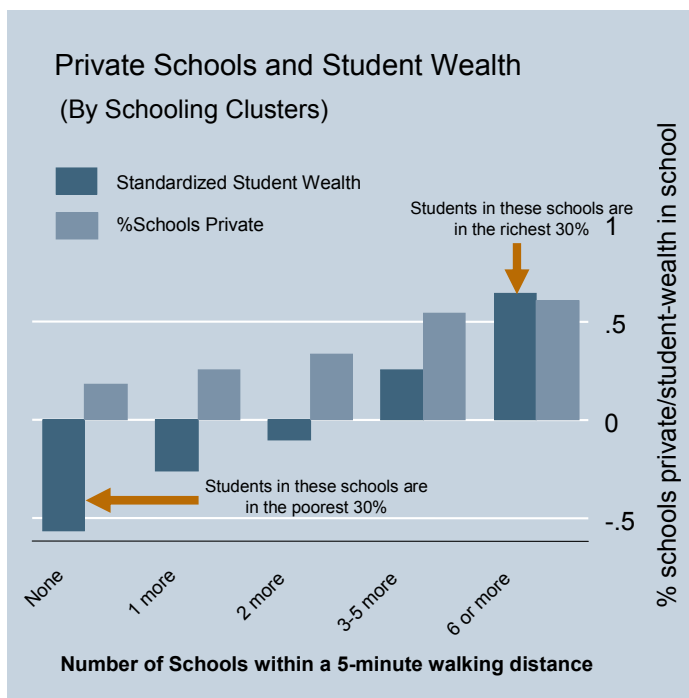


36. *Private schools are slowly spreading into previously underserved areas.* An open question is whether all areas will be served by private schools in the near future or whether the clustering of private schools in richer villages reflects longer-term patterns that are unlikely to change. The NEC data (2005) do show that private schools are slowly spreading into previously underserved areas, particularly villages with poorer socioeconomic

characteristics. Yet, the number of private schools in villages with the lowest SES increased only from 0.057 to .076 per 1000 population compared to an increase from .272 to .402 in villages with the highest SES.

37. *Even within villages, having a private school does not mean that everyone has geographical access.* The LEAPS data show that significant problems are still likely to arise with the location of private school locations *within* villages. Figure 3 showed this in the context of a single village, and highlighted that this clustering of private schools implies that they are operating in a highly competitive environment. The downside of this clustering is that peripheral populations within villages may not have access to private schools. Across all villages in the LEAPS survey, 82 percent of private schools are located close to a bank (82 percent) or a health center (92 percent)—an indicator of richer settlements closer to a main road. This contrasts with 60 percent (banks) and 71 percent (health centers) for the location of all government schools. Figure 9 puts together the greater clustering of private schools and their location in richer settlements in a startling fashion: when six or more schools are clustered together, 60 percent are private and 40 percent are public. It also shows that students in schools that are clustered are appreciably richer—children studying in schools that are “stand-alone” are among the poorest 30 percent; those studying in school clusters are among the richest 30 percent. Most villages have a well-defined “school cluster” in the richer settlement and the majority of private schools are located in this cluster.

Figure 9: Among schools in a cluster, the majority is private. Among schools that are stand-alone, the majority is government...and students in these schools are significantly poorer



38. *Increasing income does not guarantee that private schools will locate in peripheral village settlements..* Furthermore, increasing village incomes will not lead to greater penetration of private schools into peripheral areas—in richer and more literate villages, schools tend to locate *closer* to banks and health centers than in their poorer and less literate counterparts. Neither does it guarantee that private schools will start catering to the secondary sector.

39. *These location patterns of private schools are, in part, a response to a shortage of teachers in rural areas.* Consequently, a government girls' secondary school in a village increases the probability of a private school by 300 percent—largely because yesterday's students in government schools are today's teachers in private schools. Private schools do not arise in a vacuum: Government investment in girls' secondary schooling during the 1980s has probably paved the way for the explosion of private schooling today. Understanding how the local labor market functions and, in particular, the availability and size of the secondary-educated female cohort, is critical for understanding the relative strengths and weaknesses of the two sectors. It also highlights a key insight into providing education through public-private partnerships.

Box 2: Enrollment, test scores, and infrastructure in 2007

A look at enrollment, test scores, and infrastructure in government and private schools since the Punjab Education Sector Reform Program (PESRP) began in 2003 suggests that the framework for the national debate on education policy is as relevant today as it was 4 years ago:

- **Enrollment in public schools increased by 17 percent between 2000 and 2005 compared to 62 percent in the private sector.** As a consequence, the share of the private sector in enrollment increased by 7.3 percentage points between 2000 and 2005. During the same period, private school enrollment shares increased less in NWFP and Sindh—5.3 and 3 percentage points respectively.
- **Learning outcomes have remained static.** The LEAPS tests show that between 2003 and 2006, children in Class III learning outcomes were stagnant for English and declined fractionally in Urdu and Mathematics. These outcomes did not improve either in government or private schools; consequently the gap between the two remains as large in 2006 as it was in 2003.
- **The private-public infrastructure gap widened between 2003 and 2006.** Infrastructure has improved in public schools with greater construction of semi-permanent classrooms and toilets, but little else. Infrastructure improvements in rural private schools were much greater during the same period.

In the past four years, more money was spent on educating children in government schools at the same time that its share in total enrollment declined, test scores stagnated, and the private-public infrastructure gap widened. Government inputs included:

- Cash grants for girls to attend government schools in 15 districts.
- Free textbooks were provided in government schools only, until a later amendment which included urban private schools, but excluded rural private schools.
- Infrastructure was upgraded in government schools.
- School Councils were re-activated.

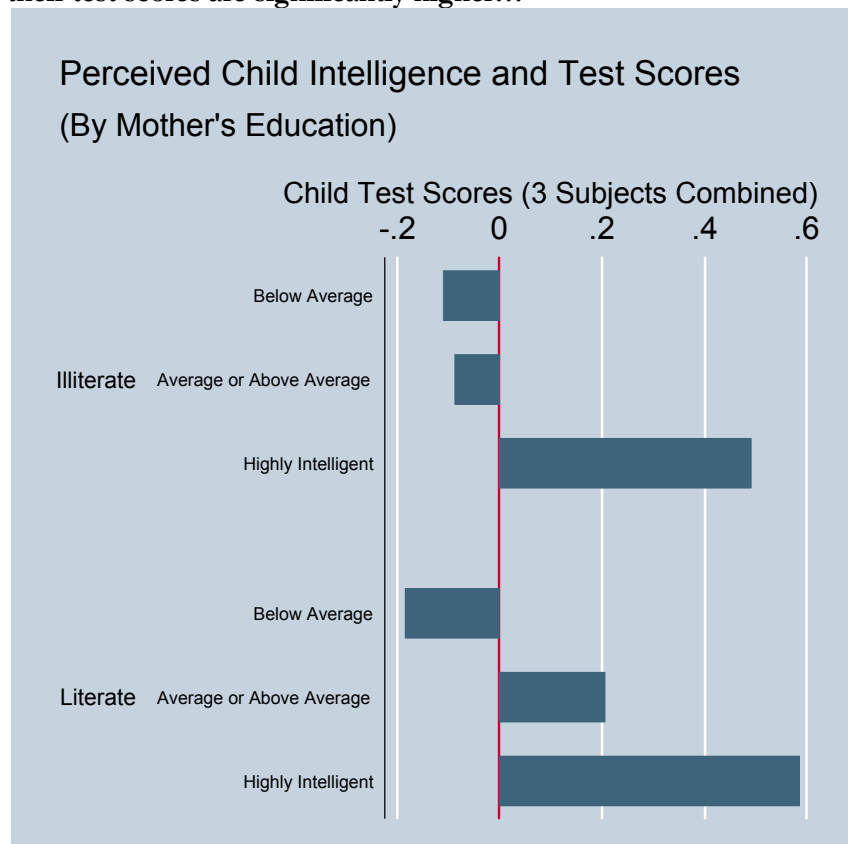
These facts are not meant to act as an “evaluation” of the PESRP, but rather to underscore the continued and increasing relevance of the private sector today.

Facts about the demand for education in a nutshell: Parents, both literate and illiterate know a lot about their children and the schools in their village. What school they choose depends on their preferences for quality, cost and distance. There are two groups of particularly vulnerable children—girls living “far” from school and children perceived as “less intelligent” by their parents. Female enrollment drops off sharply with distance to school. Parents invest less on children perceived to be “less intelligent”.

Parents are making decisions in this complicated environment to find out about schools, choose among them and ultimately invest in their children’s education. How are households, particularly those with illiterate parents, coping?

40. *Both illiterate and literate parents know a lot about schools, their teachers, and their own children.* Parents consistently ranked schools in their village with poor test scores worse than those with better test scores. The results are similar in a teacher-ranking exercise—for instance, parents were accurately reporting on teacher absenteeism. Finally, when asked about their children’s intelligence, parental perceptions correlated strongly with their children’s test scores—children perceived as intelligent by their parents had test scores 0.5 to 0.7 standard

Figure 10: When parents say their children are “more intelligent” their test scores are significantly higher...



deviations higher than other students (Figure 10). Notably, the association between parental perceptions of intelligence and actual test scores was as strong for mothers as for fathers, and for illiterate and illiterate parents.

41. *Low enrollment has little to do with child-labor but a lot to do with distance, particularly for girls. One group of vulnerable children consists of those who live far from school.* For children in the primary school-going age group, the alternative to not going to school is not working at home or in factories, instead it is playing and sleeping. Primary age children who are not in school spend only 93 minutes a day working at home and working for a wage. On the other hand, every additional 500 meters increase in the distance to the closest school results in a large drop in enrollment, and more so for girls—girls living 500 meters from the school are *15 percentage points* less likely to attend than those living next door. The drop-off is much smaller for boys, and in fact, distance to school accounts for the bulk of the gender differential in enrollment in Pakistan. The magnitude of this decline is similar among rich and poor households, teenage and younger girls, and girls with literate or illiterate mothers. Solving the distance issue is thus the *key* to increasing enrollment, particularly for girls, and it has little to do with incomes.

42. *The second group of vulnerable children consists of those perceived as less intelligent by their parents. Parents spend significantly on their enrolled children, but invest a less on this vulnerable group.* More than one-half of all educational expenditures for school-going children are out-of-pocket spending by households. Parents spend almost as much on girls as on boys. The distinction *within* households is the relative investments on children *perceived* to be more or less intelligent. By the time children enter primary school, those *perceived* as less intelligent have three strikes against them—they are less likely to be enrolled, when enrolled they are less likely to be in private schools, and even for a household with two children enrolled in similar schools, children perceived as more intelligent by parents will have more spent on them.

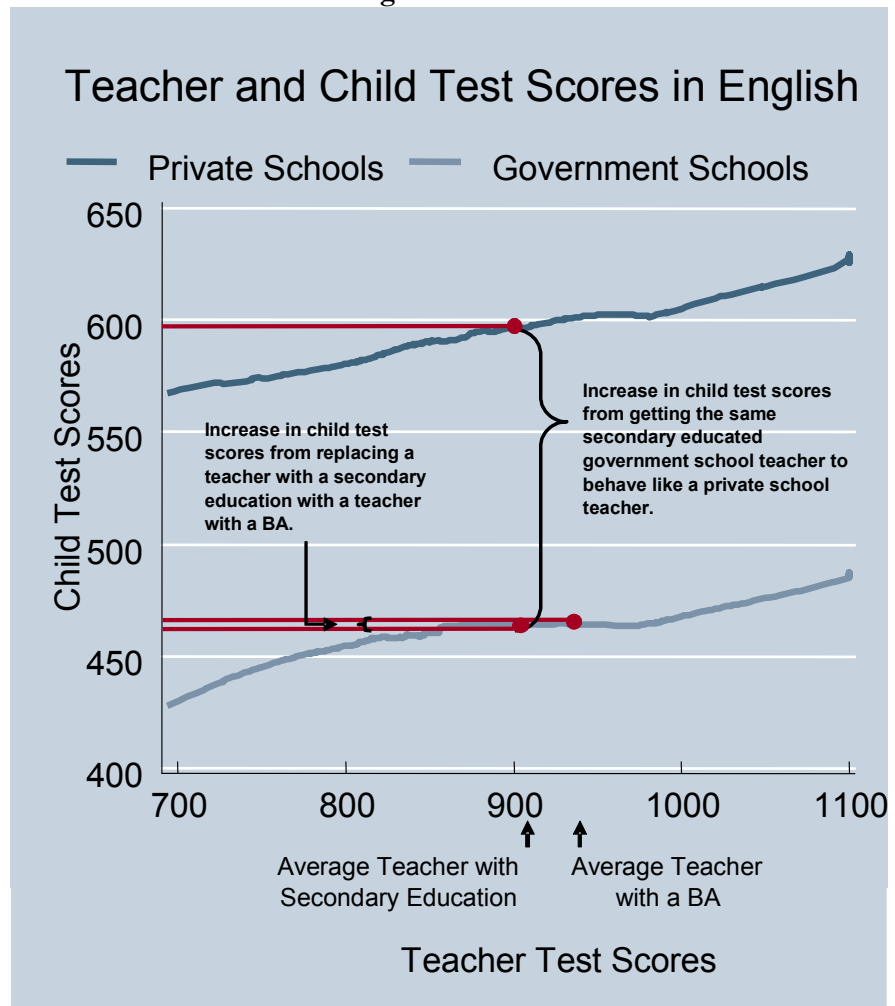
V. SHAPING THE EDUCATIONAL DEBATE IN PAKISTAN USING DATA

43. How can these data be used to answer policy questions? As examples, we take two issues that are both contentious and widely debated. The first is a proposal to increase the minimum qualifications of government teachers, the second is the question of how (and whether) to regulate private schools.

44. *Example 1: Increase minimum teacher qualification.*

The assumption underpinning this proposed policy change is that teacher education drives student learning. Figure 11 shows what we observe in the Pakistani data based on the following thought experiment: Does hiring a teacher with a bachelor's degree over one with a secondary education (in the public sector) increase child test scores? The answer, evident in the small gap on the vertical axis as we move along the teacher education curve in the government sector, is "not really"—this gap is roughly 1-2 percentage points. In contrast, a dramatic

Figure 11: Children in private schools with secondary-educated teachers report higher English test scores than children in government schools with college educated teachers



difference of 19 percentage points emerges between teachers with secondary education in the public versus the private sector. The figure strongly suggests that the benefits of increased accountability and effort trumps the marginal increases from increased educational qualifications, which are small.

45. *If effort trumps education and training, a policy to raise the minimum education standard for primary school teachers would cause problems in areas with limited teacher availability.* The median village in Punjab had 8 secondary-school educated women in 1998 so teachers with a bachelor's degree will have to be brought in from outside the village. Absenteeism *increases* when teachers are not local hires, so effort among more highly educated graduates may be lower. This does not bode well given the overall skill shortage in the Pakistani economy.

46. *Example 2: Regulate the private sector.* Different opinions about private schools and their recent growth abound. One camp advocates regulatory oversight of private schools. Another camp argues that even if private schools provide poor quality, or parents do not get what they pay for, regulation will not solve the problem. Can the data combined with standard economic analysis shed light on this issue?

47. *Economic theory suggests that the first rationale for regulation is to ensure that every school meets a minimum quality standard.* But, the bulk of the poorly performing schools are *government schools*. While top government schools are only slightly worse than top private schools, the performance of the worst government schools is much worse than that of the worst private schools. The same goes for infrastructure—of the 100 schools with the worst infrastructure, 98 are in the public sector. This is particularly a problem because parents invest more in children they think are more intelligent (e.g., they select private schools). Children perceived as “less intelligent,” who are overwhelmingly enrolled in government schools, may not be receiving an education that meets a basic minimal standard.

48. *The second rationale for regulation is to address pricing inefficiencies arising from monopolistic behavior.* Typically, every country looks at such issues and advocates alternatives. Since private schools overwhelmingly locate in schooling clusters, they *cannot* behave as monopolies. The direct competition from other schools keeps their prices low. Indeed, the average profit of a rural private school in Punjab is approximately the salary of one male teacher.

49. *The third often used rationale for regulation is that consumers are unable to evaluate the quality of the product they receive, and that it is cheaper to regulate quality rather than provide information.* As discussed earlier, the average household is actually fairly good at distinguishing well performing from poorly performing schools. Unlike the private sector where prices signal quality so that schools with higher test scores charge higher fees, in the government sector, all schools are free and therefore parents may find it harder to evaluate their relative performance. Once again the standard rationales for regulation suggest that it is schools in the government rather than the private sector that deserve closer attention. Furthermore, if there is a set of parents who do not know much about schools, providing information itself is a feasible alternative. Not only does this enable parents to make better decisions, but it can also lead to greater competition across schools leading to better

outcomes. A pilot study shows that providing information about school test scores in the village *does* lead to improvements in learning and that these improvements are higher for initially poorly performing children. Fixing the underlying failures of information may be easier than imposing additional regulatory structure from above.

50. *Of the three rationales for regulation—ensuring a quality standard, ensuring competitive pricing and ensuring that prices reflect quality—schools in the government sector are more likely candidates for regulation than those in the private sector.* But government schools are already regulated. It appears the inherent ability of parents to choose schools is better than the safeguards in educational quality the bureaucracy can achieve. Given these data, the issue of regulation of a new activity may be premature.

VI. A MODIFIED ROLE FOR GOVERNMENT?

51. Article 37 (b) & (c) of the Constitution of Pakistan (1973) affirms that “the State shall remove illiteracy and provide free and compulsory secondary education within minimum possible period.” The education landscape has changed since 1973, with a rapid rise in enrollments in Punjab and other provinces.

52. *Although there may be pockets in Punjab where school availability is still an issue, access to education is reasonable.* Every village in our sample has multiple public schools that are free, and average learning, although poor, is similar across villages, whether in lagging or high-performing regions. The “State shall remove illiteracy” and what such an affirmation means in the context of the results presented here is the real issue. The rapid rise of private schools and the higher scores in these schools is one means for citizens to fulfill their demands for such educational services.

53. *However, the view that the government should step back from education all together and leave it to the private sector and to households is too extreme.* This view assumes that parents will make schooling decisions for their children based on their *children’s* best interests, rather than their own. A body of literature argues, and as parental discrimination in Pakistan towards children shows, this is generically not the case. As a reviewer of the report points out, and we agree, “*it is worth emphasizing that parental discrimination has to be one of the most powerful reasons for state intervention into education.*” Parental discrimination means that different children in the same family can reach adulthood with very different skills and knowledge—those perceived as less intelligent by their parents likely suffer a significant educational disadvantage in adulthood. The goal of literacy is for all children in the country, so some kind of government action is required to ensure that these children are not left behind.

54. *It is well within the powers of the government to improve educational quality in public schools, and enable a balance between private school location and parental knowledge and discrimination.* The picture regarding private schools is changing rapidly, and some basic institutions are needed to help parents make better decisions. We propose a discussion on a modified role of the government. This role envisages a government educational system that tries to rectify the problems arising from private school location decisions and tries to protect children who do not receive sufficient investments from parents. The modified proposal has three parts: providing information, complementing the private sector to protect vulnerable children and innovating and evaluating “out-of-the-box” reforms for public-private partnerships. Suppose that every year a sample of children is tested in every village. Our goal is to ask what government policies can ensure that the knowledge these children hold increases over time.

Providing Information

55. *Information for better decision making and accountability:* Data on learning outcomes need to be systematically collected, monitored, analyzed and made publicly available. These data serve two purposes. *First*, given that many villages now have 8 or more schools, parents with access to test scores of schools in their village may be able to make better schooling choices for their children. Moreover, test score comparisons across children, schools and even villages could lead to greater parental demands for performance among school principals and teachers. Initial results from a randomized experiment that provides such test scores in the LEAPS sample of villages suggest that this simple (and virtually free) step could have large effects for initially poorly performing children. *Second*, transparent and publicly available information on standardized tests and school performance will allow independent monitoring on progress as well as research on what is working. The uses of these data increase dramatically if they also provide information beyond test scores on the full learning environment (teachers, parents and schools) of the Pakistani child.

56. An open question is whether the *same* protocol can be used for these two very different purposes. International experience suggests not. Typically, school-wise results, which require testing on the universe of schools, are administered by the government. However, tests used for monitoring performance and learning gaps are administered by an independent or autonomous quasi-government institution, similar to the National Center for Educational Statistics in the United States. This ensures a separation of powers and guarantees the integrity of the findings. Furthermore, since monitoring tests are conducted for a *sample* (rather than all schools), they also allow for collecting more information on student and school attributes—critical for understanding the correlates of learning achievement.

57. The widespread test at the end of Class V administered in Punjab province in 2006 is an important first step and further work is required to ensure that citizens are able to monitor and hold the state accountable for its performance in guaranteeing the right to education. If these exam results are standardized and replicated every year in a reliable manner, with information given to parents on school results, part of the information gap will be filled.

58. Regular and timely access to data is a critical component for evidence based policy making. In recent years, Punjab has collected annual data on all its public schools, instituted a test of 1.2 million children, collected detailed information on all teachers in the province and the Federal Bureau of Statistics has collected information on all schools in the country. Making such information public and validating the analysis would be an important first step. Researchers, academics, multilateral institutions (who are often implicated in the withholding of data and information) and those interested in the Pakistani education system need to ensure that this information is made available to the broader public on a regular basis. Enrollment numbers are released on an annual basis; similar results need to be made available on learning so that this becomes part of the popular discourse on the state of Pakistani education.

Reforming Government Education: Increasing Access and Improving Quality

Increasing Access: The government has been remarkably successful in ensuring access to schools at the primary level in large parts of the country, including Punjab. Further expansion includes the setting up of secondary schools (especially for girls) and identifying pockets where school availability is still a concern. In addition, the government needs to experiment with policies that can decrease the “distance-penalty” for girls.

59. *Deployment strategies for teachers could try and reduce competition between the public and private sector in the limited market for teachers.* One of the most powerful tools that the government holds in its hands is the right to transfer teachers to villages and schools where they are needed most. Given the inherent differences in salaries between the private and public sector, it makes little sense, if we are concerned about the right to education of the poor in Pakistan, for the public sector to *compete* with the private sector when both choices are available.

60. *A complementary strategy might involve transferring teachers to those villages and settlements (or levels of schooling, such as secondary) where the private sector has no presence.* This would justify part of their high salaries because of the inherent difficulties of working in the places where they are posted. Although problems of accountability and incentives will remain, these teachers will be providing some education where previously there was none. The government system of compensation and the right to transfer teachers to other locales allows it to fulfill

certain key objectives: in particular, bringing education to geographical areas where the private sector presence is not as strong and expanding access to secondary education, where poor teacher qualifications may prove an impediment for private sector provision.

61. *Increasing secondary schooling options for girls could lead to higher attainment as well as long-term gains in the increased availability of teachers.* One way to improve learning is to keep children in school longer. More secondary schools (particularly for girls) would help widen educational opportunities and ensure a cohort of secondary educated women in every village. Such an expansion would also increase the future supply of teachers. Private schools are 3 times as likely to locate in villages with a Government girls' secondary school—largely because the students in these schools yesterday became the teachers in the private schools today. Building more secondary schools will be cheaper if teachers from existing government schools with low student-teacher ratios are used, instead of new hires.

62. *The government also needs to experiment with ways to reduce the “distance-penalty” for girls.* A girl who lives 500 meters further from a school is 15 percentage points less likely to be enrolled than one who lives next door to a school. It is very costly to provide a government school within 100 meters of every household; an alternative is urgently required. The LEAPS data so far do not yield a clear policy—what they do show is that money, age and parental literacy have little to do with the ability of girls to attend farther schools.

Improving quality: From the widening international consensus and the LEAPS data, it is clear that improving quality in the government sector is all about rethinking government teacher hiring and compensation. The debate around how to do this could center around (a) letting teachers teach, (b) increasing flexibility in hiring through probation periods and the relaxation of certification where necessary and (c) providing incentives for better performance.

63. *Let teachers teach.* If teachers are primarily in villages to teach, burdening them with additional duties and requirements does not help. Work-related absences (though self-reported and not verified) are quite common in the public sector, but not in the private sector. The reasons ranged from attending workshops and meetings, collecting salaries, being on examination duty in other schools and administering polio vaccinations. Should rewards go to teachers who complete electoral rolls on time, administer polio vaccinations and attend numerous meetings, or to those who teach? A recent proposal to separate teaching and management cadres is laudable—much will depend on whether additional duties can be restricted only to those in the latter group.

64. *Consider a probationary period to identify and retain good teachers.* To some extent, good teachers are born, not made. The only way to figure out who has the instinct to be a good teacher and who does not is to observe them for some period of time. Yet, the public sector is a “settled” sector with very little turnover—teacher turnover in a given year is 24 percent in government schools compared to 71 percent in the private sector. The private sector builds in the flexibility to get rid of teachers who are inherently bad and hire new ones but the government sector does not. One possibility is a probationary period of 2-3 years during which the teacher is kept on a temporary contract. At the end of this period, the teacher may be converted to a permanent contract through a clear process. The problem, though, is in the details: Who should decide whether the teacher should be retained or not and what should be the nature of the process?

65. *Teachers should be rewarded for greater effort. These incentives will increase performance.* While few disagree with the overall premise (apart from the inherent political realities), this is a tough issues to resolve and requires extensive public discussion. Broadly speaking, there are two ways to go about doing this—one is to reward teachers on *inputs* such as attendance, the other on *outcomes* such as learning. In recent randomized evaluations, both have been shown to work; yet the former ran into problems when the same technique was tried with government nurses (rather than NGO teachers) and the latter faces severe technical issues (see chapter 3). One alternative is to reward teachers not on outcomes but on processes. The problem is that it is not clear how such a process would work, or who would decide.

Box 3: The Politics of Teacher Reform: Who Benefits? Who Loses?

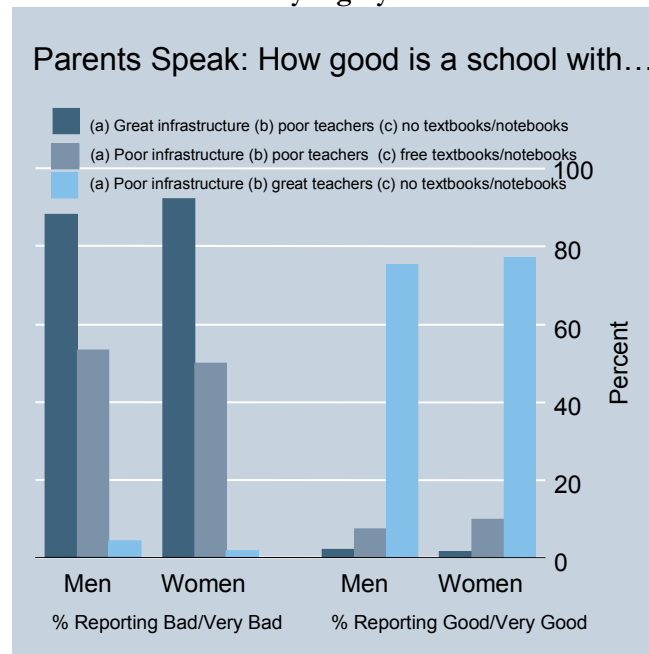
Whenever teacher reform is discussed, the first reaction is that it is “politically difficult”. Yet what does “politically difficult” mean—does the average voter *not* support teacher reform? In the last year of the LEAPS study, we asked parents a number of questions about what they wanted from the government and from their schools.

Parents graded hypothetical schools with different characteristics on a scale of 1 (very bad) to 5 (very good). The first school had “*a roof that never leaks, a new boundary wall and desks, but teachers who were frequently absent and not motivated and no free textbooks or school supplies*”. The second had “*a roof that leaks, a broken boundary wall, teachers who were frequently absent and not motivated but gave free textbooks and school supplies*”. The third had “*a roof that leaks, a broken boundary wall and desks, no free textbooks or school supplies but teachers who were always present and highly motivated*”. The majority (Figure 12) thought that schools without dedicated teachers (but with very good infrastructure or free school supplies) were bad or very bad. Close to 80 percent thought those schools with poor infrastructure and no free school supplies but with dedicated teachers are good or very good.

The findings were mirrored in a separate question where 62 percent of men and 68 percent of women reported “dedicated teachers” as their top priority in schools with “good facilities” coming a distant second with 13 percent (men) and 8 percent (women). Our third question asked what the top priority demand from the government was. Not surprisingly, 50 percent of men and women reported “jobs” as their top priority. However, 20 percent of men and 25 percent of the women reported their top priority was secondary schools in their village—ahead of roads, 24-hour electricity, 24-hour water, and greater security.

Since parents form the bulk of voters in any election, increasing teacher accountability and providing secondary schools is a politically feasible option. Neither will all teachers lose from such reforms. The problem with the current system is that all teachers are treated the same way—regardless of whether they are highly motivated and hard-working or not. Reforming teacher compensation will benefit teachers who are working around the clock in difficult circumstances to ensure that children learn. The losers are non-performing teachers. Pakistan needs to decide whether it can mortgage the future of millions of children a year to the demands of a fraction of teachers who are not performing.

Figure 12: Parents value schools with dedicated teachers very highly...



If not teachers, what else?

66. *Apart from teachers, there is no single input that can be easily and consistently linked to test scores.* As an illustration, in one of our sample villages the three head-teachers of private schools agreed that motivated teachers were critical for better learning, but they differed on everything else. In fact, each of them was doing something different to improve learning in the school. The first had arranged Mathematics training for a teacher; the second constructed a boundary wall because he felt that road-traffic was distracting children and the third provided a chaperone to bring children to school across a small forest. Private schools are probably doing better not because of “a set of inputs” that are higher quality than the government, but because they have the ability and flexibility to fix the weakest link in the chain, and in different schools, this implies that they are doing different things.

67. *Government schools can learn from private schools.* One approach is the “planning approach” that tries to see what input should be augmented to improve outcomes; a second approach admits that different places and different children have different needs and a central planner can *never* seek to align inputs perfectly for every single child. It also recognizes that there *are* agents at the local level who can do this better—the flexible head-teachers in private schools for instance. The “flex-approach” suggests that instead of trying to fix every input optimally, the planner fixes the *system* so that those who know more and are able to respond better to individual needs prosper, while those who are inflexible and provide low-quality inputs are taken out of the system. A debate around whether such a “flex-approach” is better and feasible in the government system is necessary for shifting from inputs to outcomes in educational performance. Government should not try to fix the pipes, but instead fix the institutions that fix the pipe and ensure that the water is flowing. How the institutions actually fix the pipes is of lesser concern.

Innovating and Evaluating “out-of-the-box” reforms

68. *In countries where private schooling option is widespread, policy options in education have revolved around public-private partnerships.* Such partnerships largely involve government financing and private delivery of education. Examples include grant-in aid schools (UK, India) and charter schools in the US which largely involve block grants/funding to private schools. The other model is financing families directly through vouchers to each school-going child. This has been tried in Colombia, Chile, Sweden and the U.S. among other countries. How well these alternate forms of partnerships work is highly debated and depends on country circumstances

69. *Are vouchers the way forward for fixing institutions in Pakistan?* Along similar lines, one way to fix the institutions is to provide financing for education, but leave provision to the private sector. Under such schemes (or equivalent schemes such as tuition subsidies), each child is given money (a “voucher”) that can

be used to attend the school of her choice—be it is private or public. As the popularity of such schemes increases, it is becoming clear that their success depends on (a) whether parents can figure out good and bad schools; (b) whether parents value the same things in schools that governments do and; (c) whether the supply of private schools will increase to meet the demand generated by such schemes or not.

70. *Parents are good at evaluating school quality.* When they say that a school is good, test scores are high and when they say that a school is poor, test scores are low. However, not all parents may be equally informed. Furthermore, parents may have very different views of what they value in a school compared to governments. The critical difference in the Pakistani case is the distance to school. Governments do not think that schools further away from children are “worse” but parents clearly do.

71. *Given that distance is such a critical determinant of school choice, the question is if children who live in villages or peripheral settlements without private schools will be able to access such schools, even with a voucher.* One answer is that more money will enable households to fund transport options for their children to get to school. There is little evidence in support. The LEAPS data show that the distance penalty for girls has nothing to do with how rich a household is. Not surprisingly therefore, a stipend given for girls to attend government schools did increase enrollment by 10 percentage points, but at the cost of \$400 for every additional child enrolled. A second answer is that new private schools will set up in areas where they previously did not exist. Data collected thus far does not answer this question. If teachers are a severe constraint, as previous work suggests, it may take a long time for schools to reach these underserved areas. Furthermore, if *existing* private schools are unable to hire more teachers to cater to the increased demand from vouchers, either their fees will increase, or their quality will drop, or both.

72. *Given the current educational environment, and the government’s interest in setting up voucher schemes, there is clearly a strong case for an evaluation of what a voucher system does.* For us, there would be at least three components for such an evaluation. First, it would last at least 5 years, since it will be critical to see whether the private sector is able to respond to greater financing by increasing supply. Second, it would consider a *village* as the appropriate unit at which to look at test-score responses. Vouchers may lead to greater social stratification; if such stratification means that children learn less from each other, it may have a detrimental effect on learning. Third, it would look not only at the effect on the “average” child but also on children who are disadvantaged, either because of their location or their backgrounds. In either case, even if these vouchers bring about the desired improvements in supply they will take time. In the interim, there is little alternative but to directly tackle the problem of teachers in the government sector.