"Karthik [has] made a systematic, evidence-based attempt to identify the causes of [India's] catastrophic educational failure, and outline approaches to reform."

Afterword by J P Narayan, Lok Satta Party

# UnpackED

## The black box of Indian school education reform

Karthik Dinne

# UnpackED – The black box of Indian school education reform

*Karthik Dinne*

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*To my Mom, Dad and Sister*

# Contents

# Acknowledgments

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# Foreword

Frustrated with the quality of education reforms debate, he took a vow. He decided to pull together all available empirical research on critical issues facing Indian school education. Realising that this could become a long-term project, he promised to capture it all in 42 blogs in 42 days, one blog per day. The first blog was on 16 August 2015. What you have in your hands is the book that grew out of those blogs.

When Karthik told me about this, I was excited by the prospect, and resolved to raise the necessary money to convert the blogs into a book and publish it. It is the most opportune time to have this research summarised and synthesized, as we debate the contours of the New Education Policy (NEP). Think of the last debate you had on education and you will find that theme captured in the book—from learning outcomes, types of assessments, Board Exam reforms, teacher education and certification, parental choice and vouchers, role of the state and its capacity, the desirability of private sector, including budget private schools, to education for-profit. Karthik meticulously and patiently presents research on all sides of the debate. Frankly what I most admire is that after presenting the full body of research, he does not sit on the fence like an academic, he becomes a citizen and takes a position on what he thinks is right for India. It is this academic-citizen role that is praiseworthy and in my view, also the most helpful to the reader.

It is clear that in the drafting of the Right to Education Act (RTE) little available research was consulted. Despite all the research, the primacy was given to inputs and infrastructure and none to learning outcomes. It will be difficult to amend the RTE clause by clause, but the NEP should lead to an enabling legislation, which can supersede the RTE. The legislation to implement NEP, let's call it a Right to Learning, could usher in a more evidence-based policy framework. Both NEP and the attendant legislation should avoid being prescriptive and provide a framework that allows states and local governments as well as private providers to meet their local challenges while achieving high quality standards.

One key message in the book is about state capacity—none of the reforms can be implemented or sustained if the state capacity is weak. Gurcharan Das raised this concern in his recent book, *India Grows at Night: A Liberal Case for a Strong State*. Using the analytical framework of Francis Fukuyama and Lant Pritchett, the book explores the various dimensions of state capacity and their implications for policy choices.

A larger question is—state capacity to do what? Whether the state has 'sufficient' capacity depends on the role or expectations from the state. If we expect the state to build and run schools, hire and train teachers and principals, design curricula and textbooks, conduct board exams and also regulate private schools in terms of the size of classrooms and playgrounds, number of books in the library, teacher qualifications and salaries level, and annual increase in school fees, I suspect no state would have the capacity to do well in all of these areas. There is no escape from building a consensus on the nature of state's role in education. The definition of the state's role cannot be in abstract; it also needs to take account of the reality that is India today. In order to build a consensus on the state's role, we first need to have a common understanding of the ground reality of education delivery in India. India is a diverse nation, maybe we need to consider the reality at the state, or even district level. Only after building a consensus on the ground reality and the role of the state in education that we would be able to identify gaps in the state capacity and take steps to remedy it.

An important part of state capacity is the ability to say no. I learned this in my work on a couple of state education taskforces. Many schools or school systems have several interventions implemented by different groups. Almost every non-profit working in education wants to work with government schools because that's where the poor are, and also because of the scale for change. These government schools have become the *karmbhumi* for well-meaning NGOs or the lab for education researchers. There is a reading at the right level pilot, CCE training for teachers, leadership capacity building of the principal, testing of the quality of mid-day meals, SMC empowerment programs. What would happen if there were even three groups sitting in your non-profit trying to help improve

its performance? And add this: none of those groups were invited by you!

Given the challenges of a common understanding of the state role in education or the actual or potential state capacity, and also lack of reliable data and documentation of the how the system works, ideology comes to dominate the education reform discourse. I am the last person to say that ideology has no role. And the choice of higher-level values and norms is ideological; there is no way around it. Some may believe that by invoking constitutional values—equality, justice, socialism, secularism—they are being non-ideological, but it simply pushes the debate to one level higher. Some may think that by pointing out public system as the reason for universal education in western countries, their demand for common school system is non-ideological. But the debate around the public education system in western countries itself is highly ideological.

The goal can't be to remove ideology but reduce the range of the questions whose answers are ideological. It is in narrowing the scope of ideology that data, documentation, and research is of value. This is precisely what this book offers.

We hope that the book would improve the quality of debate in the formulation of the New Education Policy. The NEP would make or break India. We must get it right. Read the book, please.

*Parth J Shah*
President, Centre for Civil Society

# Preface

Jared Diamond in his book 'Guns, Germs and Steel' explores the reasons behind diverse paths of history of communities, all of whom might have started from same stage at some point in the past. The book is a good read and his words in the preface caught my attention. He argues that a book addressing a question of this nature would require a range of expertise over multiple disciplines like genetics, molecular biology, epidemiology, histories of political organisations, archaeology and so on. This might seem to demand multiple authorship, but Diamond says "that approach would be doomed from the outset, because the essence of the problem is to develop a unified synthesis. That consideration dictates single authorship, despite all the difficulties that it poses. Inevitably, that single author will have to sweat copiously in order to assimilate material from many disciplines".

While reading this, I saw parallels to school education. My mother works as a teacher in a government high school, and hence I grew up hearing about and seeing the functioning of public schools. I also observed that education can significantly alter the trajectory of a person's life. Hence, the obvious question was: What can we do to improve it? In my quest to find the answer, over the past few years I asked the following question to hundreds of people across disciplines, teachers, principals, administrators, and experts: What is the critical bottleneck in today's school education? I received diverse responses: A public school teacher would narrate problems due to overcrowded classrooms, lack of enough teachers, and poor infrastructure; a pedagogy expert would say that our curriculum and teaching processes are flawed; some would say that education is not a politically important issue and hence gets neglected; some would argue that maintaining the status quo of education is a systemic plan to disempower citizens; some others would say that the incentive structures are skewed; while some concerned individuals would point out the lack of scientific temper, questioning skills among school children; yet others would argue that we as a society do not understand the type of education needed for our children, and so on.

While all of this may be true, it still does not provide us a convincing answer, especially if we are looking for ways to reform it. As one might have understood from the responses shared above, school education has many strands, and the approach to reform has been a fragmented one, with each person looking at the issue from the perspective of their interest or expertise. It is in this context that Diamond's words arguing for a unified synthesis that combines multiple disciplines to develop a unified synthesis struck a chord with me.

In education too, we need such a unified synthesis which can join the dots from across disciplines and identify the critical constraints (core reasons). For a long time, I kept hoping that someone would publish a unified synthesis of education. Finally, I decided to put together such a synthesis myself and started making notes and collecting resources. I was hesitant as I felt I may not know enough and the synthesis may turn out to be incomplete, and hence allotted five years to the task. With time I realised that the learning process is endless and it is therefore useful to attempt preparing such a framework. There could not be a better time than now to do this in the context of discussions on the National Education Policy (NEP).

Developing such a unified synthesis poses many challenges. The first challenge is the requirement of knowledge across disciplines—pedagogy, governance, politics etc. I am fortunate to have been involved with organisations working in these disciplines in the past which helped me gain perspective into these aspects. The challenge is not just to know the issues in these disciplines but also to know their nuances, so that appropriate connections with other disciplines can be made. When one is trying to be a jack of all trades, there is always the danger of missing a nuance or misinterpreting information.

The second challenge is to maintain the balance between providing a comprehensive perspective vs. going in-depth. Focusing only on the macro picture has the danger of losing perspective and arriving at incomplete solutions or prescriptions disconnected with reality. Focusing only on the

micro picture might not help in addressing the root causes of the issue and devising a systemic solution. One must understand the classroom as much as the broader policy, and then join those dots. A unified synthesis may focus on the 'why' and 'what' of issues but not much on the 'how' part of it, though one must be aware of the difficulties involved in 'how', and integrate them accordingly in the broader structure. For example, for the purpose of a unified synthesis, it may not be necessary to go in-depth into a particular pedagogy and the finer details of instructional practices in the classroom; at the same time, one must be aware of the challenges involved in implementing such pedagogy which should then be looked at as part of a broader framework.

The third challenge is connecting the dots. Making an argument is similar to connecting the end of a wire at one side of the river to the hook at the other end, thus forming a bridge. The strength of such a bridge depends on supporting structures called evidences. The challenge here, at times, is that indicative evidence is available but not complete evidence. A researcher refrains from making any claims in such situations, citing lack of enough evidence, but those in charge of designing a policy cannot wait till the complete evidence emerges. In the absence of evidence, one might have to make some intuitive guesses and approximations and at times even take long strides.

The fourth challenge is to give an honest presentation of both sides of the argument because there is always a risk of individual biases creeping in.

With all these hesitations, concerns and doubts, I put forward this unified synthesis. It is addressed to people who want to get a comprehensive perspective of issues in school education, and independent citizens or policy makers trying to make sense of this complex maze. It must be noted that this is not a book critiquing particular policies; the idea is to look beyond the superficial issues and understand the core reasons behind the issues of our school education systems.

In his synthesis, Jared Diamond argues that "history followed different courses for different peoples because of differences among peoples'

environments, not because of biological differences among peoples themselves". What is the equivalent, then, for the current Indian school education system, the fundamental reason behind the issues, the critical constraint? Is it infrastructure? If it is infrastructure, why did we not see improvements in learning outcomes though the status of infrastructure has improved? Is it because of the lack of motivated people? If that is the case, what is the reason for this lack of motivation: Are passionate people not entering the sector or are they losing their motivation after becoming part of the system? If it is teacher training, why have teacher trainings till now had no impact? If it is lack of appropriate tools, would it help if we provide the best computers with the best possible content? If not, what is stopping them from working? Such critical questioning will help us realise that all these symptoms point towards one underlying root cause.

In the book, I unpack this black box by synthesising evidence from across various strands of education and argue that the root cause of the current state of school education is the weak state capacity, the capacity to design and implement rules and policies. All the other components discussed above are important individually, but their effects may not convert into outcomes due to the weak capacity of the state. Effects of weak state capacity are not just limited to these. Repeated implementation failures due to weak state capacity shrinks our imagination of possibilities and prevents us from dreaming big, the deadliest of all effects, and may force us to settle for second-best solutions. We thus have to address this first if we have to proceed any further. Along these lines, the book discusses the issues in education, the concept of state capacity, its effects, and frameworks to understand it and also proposes a framework to carry out reform to strengthen the same. It also discusses widely debated themes in education—critical thinking, decentralisation, incentives, private schools, vouchers based on relevant academic literature.

The difference between Diamond's unified synthesis and the one for education is that Diamond discusses events of the past to form a narrative and hence the synthesis is static and need not change with time unless new

evidence comes up. In the case of education, we are discussing current issues, challenges and solutions; hence any unified synthesis only depicts the current scenario, and is subject to change with time as we grapple existing constraints and new ones come up. It means that even after we strengthen state capacity, much work would need to be done. Once we achieve this, the next stage would be to utilise state capacity effectively.

This book is an honest attempt to analyse issues in education from all perspectives to understand the core reason behind the problems today, which as it turns out to be, is the weak state capacity. I hope I have done justice to it. I realise that there might still be gaps in the framework and the book will always remain a work in progress. I look forward to receiving critical feedback and insights.

I also hope that this book provides enough thrust to the issue of state capacity to be recognised and be made part of the discourse and not be brushed aside as something abstract, non-actionable and unsolvable. Finally, I hope that with our collective wisdom and concerted efforts, it will be addressed one day.

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# 1

# THE REALITY

A girl born into a struggling farmer's family in an Andhra Pradesh village was asked to stop studying after Class 5. The reason: the school offering further studies was situated five kilometres away. This meant she would have to walk a lonely ten kilometres a day, passing through fields. In those days girls were not sent to school, let alone with such risks. But she was determined to study. She convinced her family, walked ten kilometres daily, and topped her school. She went on to excel academically and became a government school teacher. That girl is my mother. She still wonders at times what would have happened had she not taken the risk and pursued her studies.

Years after she left school, my mother kept coming across instances of students struggling to complete their education. There is Suresh (name changed), for instance, whose ailing parents had to make the difficult choice of educating one of their two children. They knew that education alone would pull them out of poverty, and decided to send their son to school. Suresh's sister turned breadwinner, working at construction sites. At the tender age of 11, Suresh too began working part-time. He would be up at 3 am to distribute newspapers. They often had no money even

for medicines. His teachers pitched in, even paying for his uniform. Suresh has stood first in school.

There are examples elsewhere. The son of a bonded labourer persevered against all odds, topped among the district's schools, and used his prize money on coaching classes in physics. He lived on a simple rice dish, *khichdi*, for two years while preparing for competition exams, all by himself in a strange city. He cleared the IIT-JEE exam and eventually joined a top department in one of the IITs.

The three stories might differ in detail, but the broader point remains the same: the demand for education, and the struggle to pursue it. When students come to school, they have certain aspirations and hopes. Parents send their children to study, longing in the fond hope that it will help their children to lead a life better than theirs. Thus, schooling system has a tremendous responsibility, but are we succeeding? Is our education system doing justice to all these students, helping them realise their hopes and aspirations?

Tales of successful graduates from top institutions like IITs, IIMs, and NITs dominate the narrative when the quality indicators of India's education system are discussed. Their success stories are held up as testimony to its success. A documentary on IITs by a US television channel starts thus: "The United States imports oil from Saudi Arabia, cars from Japan, TVs from Korea and Whiskey from Scotland. So, what do we import from India? We import people, really smart people",[1] commending the quality of students produced by our education system. It is noteworthy that Indians educated in India run two of the top technology firms in the world, Microsoft and Google (at the time of writing of this book).

We have even witnessed an IT boom in our country in the past few decades with the emergence of multinationals like Infosys, Wipro, and TCS. In the past few years, we have also seen a flourishing culture of entrepreneurship and the emergence of innovative start-ups. Our engineers have built Flipkart, Snapdeal and other world-class technology companies. Scientists and engineers of Indian Space

Research Organisation have successfully built and launched the Mars Orbiter on a shoestring budget. All of these are achievements of people who passed through the Indian education system. Thus it may suggest that 'all is well' with our education system.

Does it depict the reality, a comprehensive picture of Indian education? Mahatma Gandhi once said: "Whenever you are in doubt, or when the self becomes too much with you, apply the following test. Recall the face of the poorest and the weakest man [woman] whom you may have seen, and ask yourself, if the step you contemplate is going to be of any use to him[her]."[2] We are now in doubt, hence it might be appropriate for us to rephrase his talisman to our context: Recall the poorest student in the remotest corner of India. What is the quality of education that this student is receiving?

Pratham, an NGO, has done remarkable work in documenting information on learning levels in rural India. Every year since 2005, it has been releasing an 'Annual Status of Education Report' (ASER) on the learning levels (outcomes) of students in rural India. The survey is conducted in a sample of villages across India and tests basic skills of language (mother tongue) and mathematics.[I] In language, the questions on reading consist of four levels–letters, words, short paragraph (Class 1 level text) and a longer text (Class 2 level text). In mathematics, questions are again of four levels–number recognition (1-9), number recognition (10-99), two-digit subtraction with carry over, and three-digit by one-digit division. In both the assessments, children are marked as per the highest level, which they can do comfortably. The mathematics questions in Table 1.1 give us an idea of the type of questions asked.

---

I In ASER, children are surveyed at home and not at school. It means that the sample of students surveyed may consist of students going to private schools, government schools and even those who dropped out. It is also not necessary that the same children are surveyed every year.

**Table 1.1: ASER sample mathematics test**

| Number recognition 1-9 | Number recognition 10-99 | Subtraction 2 digits with borrowing | Division 3 digits by 1 digit |
|---|---|---|---|
| 3 7<br>1 4 | 65 38<br>92 23 | 51<br>- 35<br>67<br>- 48<br>84<br>- 49 | 7) 918 (<br>6) 769 (<br>8) 987 ( |

Source: ASER 2014.[3]

In language, the 2014 survey found that

- One out of four students of Class 3 could read a Class 2 level text fluently
- More than half (52%) the students of Class 5 could not read Class 2 text
- Even in Class 7, 25% of students were unable to read the Class 2 level text

In mathematics,

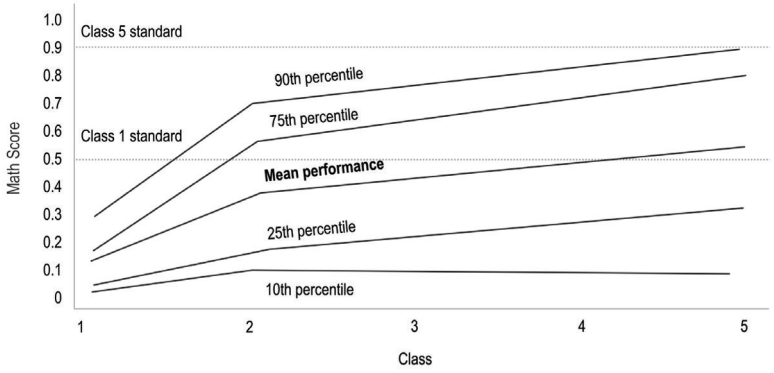
- One in five students (19.5%) in Class 2 could not recognise single-digit numbers
- Only one in four kids (25.3%) of Class 3 could do two-digit subtraction
- 56% of Class 8 students could not do a three-digit by one-digit division

These results suggest that students are way behind their class levels in terms of their learning, and reflect a poor state of outcomes by any standards. It

will not be incorrect to conclude from ASER results that we have failed to meet the criteria of Mahatma Gandhi's talisman of being able to provide quality education to the poorest of the poor in the remotest areas of India. It must be reiterated that when we talk about education here, we are not even talking about higher goals like critical thinking; we are just talking about basic numeracy and reading, the minimum that one expects. We are not able to ensure even that.

ASER does not track the same children every year and hence we cannot visualise the progress of children over time. A longitudinal study conducted in Andhra Pradesh assessed 40,000 students from across 100 government primary schools (representative sample of schools) over a period of five years.[4] Figure 1.1 shows the trajectory of students, in reference to Class 1 and Class 5 learning levels.

**Figure 1.1: Learning trajectories over 5 years**




Source: Muralidharan & Zieleniak (2013).[5]

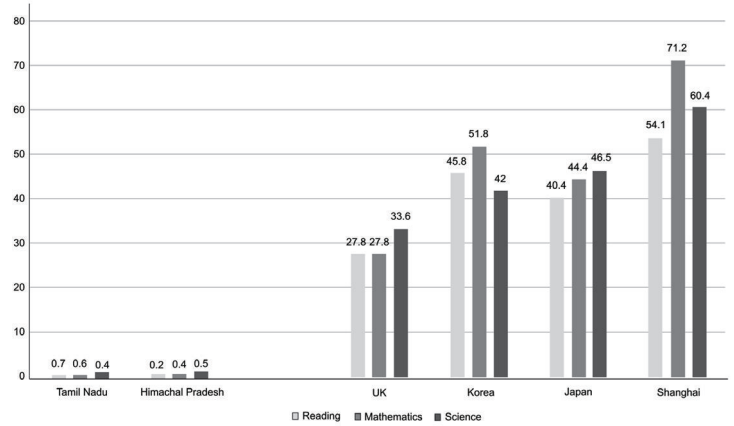
From Figure 1.1, one can observe that at the end of Class 5, 60% of the students were still of the level of Class 1. This essentially means that about more than half the students spent five years in school without learning much. The bottom 10% is learning absolutely nothing from Class 3. Gaps that emerged in the initial years widened and persisted with time; children who once fell behind tended to stay on that path. It is a sad picture, a

terribly sad picture. If the ASER results make us sad, Figure 1.1 should lead any concerned person to clinical depression.

The ASER results are corroborated by other assessments. Organisation for Economic Co-operation and Development (OECD) conducts an international assessment called Programme for International Student Assessment (PISA) every three years. India took part in PISA in 2009 along with 73 other countries. A sample set of students from two of the high-performing states in India—Tamil Nadu and Himachal Pradesh—were assessed as part of the study. India was ranked last but one out of the 74 countries.

It can be argued that India may have performed poorly on an average, but the best of our students in this sample could be comparable with the best in the world. The PISA results do not support this hypothesis either. PISA categorises students who took part in this assessment into six levels, based on their scores. Students at Level 4 are strong performers and those above are top performers. Figure 1.2 shows the proportion of children above Level 4 in India, compared with other countries. Less than 1% of students in the sample assessed are at Level 4 and above in India, whereas this number ranges from 30% to 70% in Japan, the United Kingdom, South Korea and Shanghai, China. By any standard, there is a staggering contrast in the learning levels of India compared with these countries.

**Figure 1.2: Share of 15-year-olds with competency level above Level 4, PISA 2009[II]**

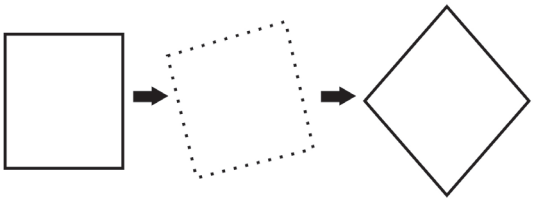



Source: PISA 2009[6].

It is also argued that education in an average government school and an average low-cost private school may not be of good quality, but that in elite private schools is. A leading assessment firm, Educational Initiatives Private Limited conducted a survey of 23,000 students in 89 top elite schools across five metros in India. It found widespread rote learning in elite schools.[7] Let us examine the performance of students in some questions used in this assessment:

Example 1:

Afzal has made a square on his computer screen. He now turns the shape as shown.



II Image credits: Natarajan, Gulzar. 2015. "One graphic about India's learning". 19 October. http://gulzar05.blogspot.in/2015/10/the-one-graphic-about-indias-learning.html.

What is the change in the shape?

A. The square changes into some other shape and its lengths also change.

B. The square changes into some other shape but its lengths do not change.

C. The figure remains a square, but its side lengths change.

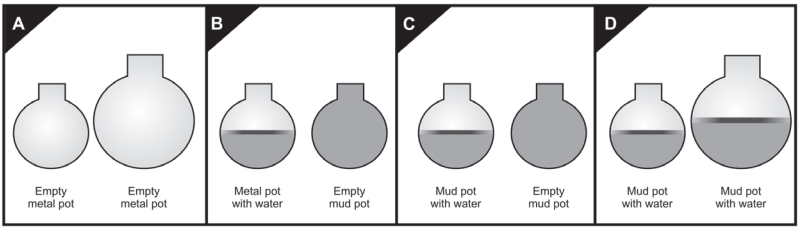
D. The figure remains a square, and there is no change in its lengths.

This question was put to students of Class 6. Around 47% of the students chose option B, an incorrect option. This was probably because a square is not represented in tilted orientation in textbooks and hence they failed to identify the shapes based on properties.

Example 2:

"Empty vessels make more noise."

Vasudha wanted to test this proverb. Which of the following pairs of vessels should she strike with a stick to do this?




This question checks students' ability to design an experiment for a given hypothesis. About 30% of Class 6 students chose option A in which both vessels are empty, an incorrect option. They were probably looking at the word 'empty' in the proverb and choosing vessels which are both empty, whereas one needs to take a filled vessel and a partially filled (or completely empty) vessel to test this hypothesis, as shown in option B.[8]

These examples suggest that a significant proportion of students in even elite private schools find it difficult to answer questions requiring application of knowledge or critical thinking. Leave aside the metric of Mahatma Gandhi's talisman of quality education to the poorest in the remotest corner of India; we are not even able to deliver quality education for the most privileged.

A famous poem in Telugu goes as follows:

> *Medi pandu chooda melimayundu*
> *Potta vippi chooda purugulundu*
> *Pirikivani madini binkamilagura*
> *Viswadhaabhirama vinura vema*
>
> Medi, a fruit, looks gorgeous externally,
> But when we rip it, we find worms within.
> In a similar manner, a coward appears brave outside, but in reality he is not.
> Beloved of the Bounteous, Vema, listen!

This poem is commonly used in Telugu-speaking households to portray a situation where everything seems good superficially but is rotten in reality. Our school education system is an apt example. It may be hard to believe and may seem counterintuitive, but the reality is that that there is a deep learning crisis in the country. Denying or delaying this recognition is not an option–the opportunity costs of losing out on a generation are too high and we cannot afford it, especially if we want to compete with other countries. The more we delay in recognising this problem, the greater the injustice we are perpetrating on many innocent students attending school with aspirations for a better life. Addressing this challenge is not simple by any means; it can be done, but it needs careful diagnosis of the problem to guide our actions and efforts towards implementing the same. Let us now embark upon a journey of exploration to understand the context and landscape of school education and the reasons behind its poor state today.

# 2

# THE JOURNEY

## A bird's eye view

We start our journey by first understanding the context of the problem from a macroscopic perspective. As per DISE 2013-14, there are 10,93,969 government schools in total, which constitute 75.5% of the total schools in the country. There are 46,12,429 government school teachers, who account for 59.73% of the total. There are 13,24,28,440 students in primary schools and 6,64,71,219 students in classes 6-8.[9] These are massive numbers, and illustrate the scale of the problem we have to deal with.

It is also interesting to look at the finances. For the 20 states listed in Table 2.1, the government spends Rs.14,357 per annum on an average on a student attending a public elementary school (2011-12). Contrary to popular perception, this is rather high, especially compared to the fee charged by low-cost private schools.

**Table 2.1: Per-capita government expenditure on public school students**

| State | Per govt. school student public expenditure per annum (Rs) |
|---|---|
| Andhra Pradesh | 13,864 |
| Assam | 10,874 |
| Bihar | 4,515 |
| Chhattisgarh | 12,160 |
| Gujarat | 13,377 |
| Haryana | 17,817 |
| Himachal Pradesh | 27,073 |
| Jammu & Kashmir | 18,304 |
| Jharkhand | 6,031 |
| Karnataka | 15,300 |
| Kerala | 40,328 |
| Madhya Pradesh | 8,066 |
| Maharashtra | 21,002 |
| Odisha | 8,424 |
| Punjab | 7,577 |
| Rajasthan | 11,576 |
| Tamil Nadu | 15,042 |
| Uttaranchal | 20,596 |
| Uttar Pradesh | 9,255 |
| West Bengal | 5,957 |

Source: Accountability Initiative.[10]

The overall expenditure figures include salaries of teachers, expenditure on investment and other aspects. Table 2.2 gives the percentage of this budget that is used for teacher salaries. We observe that in most states, the majority of the money spent goes towards the same.

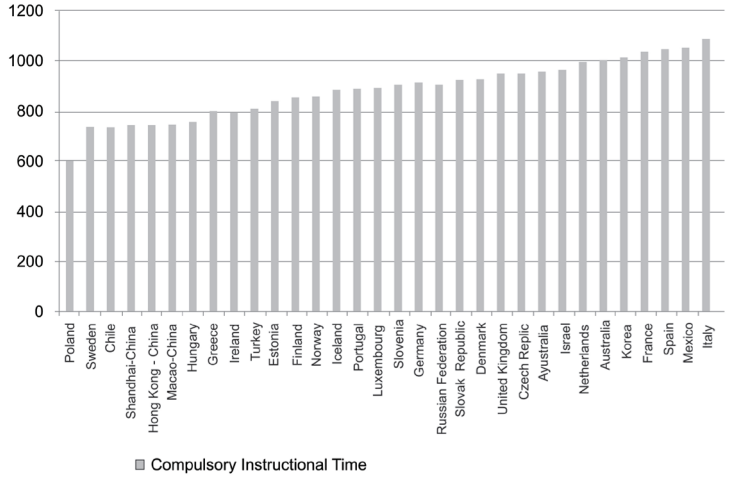
**Table 2.2: Expenditure on teacher salaries in select states as percentage of budget (%)**

| States | Percentage of budget for teacher salaries (%) |
|---|---|
| Andhra Pradesh | 66 |
| Bihar | 59 |
| Himachal Pradesh | 80 |
| Madhya Pradesh | 63 |
| Maharashtra | 66 |
| Rajasthan | 87 |

Source: Accountability Initiative[11]

We seem to be incurring significant expenditure not just in terms of money, but in terms of time too. Figure 2.1 gives the compulsory instructional time in some countries across the world.

**Figure 2.1: Compulsory instructional time(in hours) in select countries—a comparison[III]**




Source: Holland, 2015.[12]

III Image credits: Evans, David. 2015. "Do More Hours Equal More Learning? Probably, But It Isn't Cheap". Development Impact blog, World Bank. 24 June.

We note from Figure 2.1 that Italy has the highest instructional time, around 1,100 hours per annum. As per the DISE 2013-14 statistics, primary schools in India have 224 instructional days in a year on an average and upper primary schools (Classes 6-8), 225 instructional days.[13] If we assume that schools effectively work for four hours a day, we are at par with top countries in the figure in terms of time investments, with an annual instructional time of 900 hours.[IV]

Note that we stand at 'last but one' position in international rankings (PISA 2009) despite leading in terms of monetary and time investments. This sets the stage for a curious question: What is happening inside government schools? In order to understand this phenomenon, maybe it is better to visit a government school and get a sense of the dynamics in the school.

School visits can give us interesting insights but they may give us a skewed picture, depending on the type of schools, the context, and the number of schools we visit. One way to offset this is to visit enough number of schools across various contexts to get a fair sense of the picture. This is a resource-intensive and time-taking task and it may not be possible for us as individuals to make such extensive visits and take detailed notes. Fortunately, 'Public report on basic education in India' (PROBE) has carried out such an exercise.[V] It surveyed schools in 234 villages of Bihar, Madhya Pradesh, Rajasthan, Uttar Pradesh and Himachal Pradesh and also 1,376 households in these villages. It has captured rich qualitative information about the schools and the perspectives of different stakeholders—parents,

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IV **Another study conducted in Andhra Pradesh, collected data on instructional time** of public schools in their sample. The public schools in the sample of this study from the Andhra Pradesh state in India reported to have spent 1796.47 minutes per week on instruction. If we assume that an academic year is of eight months effectively, this amounts to nearly 960 hours per year, which is also close to our estimate. (Muralidharan, Karthik, Venkatesh Sundararaman. 2013. "The Aggregate Effect of School Choice: Evidence from a Two-stage Experiment in India". NBER Working paper, 19441. Appendix VII)

V PROBE is based on a survey conducted in 2006, which is before the enactment of the Right to Education (RTE) Act, which mandated many infrastructural norms, and hence the current scenario regarding these may be different from the findings of the report.

teachers, community and students and hence offers a good snapshot of public schooling. It was first conducted in 1996 and again in 2006. It may not be possible to generalise the PROBE observations to all contexts, but since it was conducted in 234 villages across five states, it gives a good representative picture.

The PROBE team found there was no teaching activity at the time of their unannounced visit in close to half the schools surveyed: "Some teachers were absent, others were found to be sipping tea, knitting, or whiling away time simply chatting."[14] These findings square with another survey in which unannounced visits were made to government primary schools (nationally representative sample). It found that 25% of teachers were absent from school, and only about half were teaching.[15]

PROBE suggests that one of the important contributing factors could be the absence of sufficient head teachers. During their visits, the survey team found that there was no head teacher in more than half of all schools: 20% posts were vacant, 15% were away on official work, and 12% were on leave.

Inside the classroom, PROBE's survey team found that reading out loud from textbooks and making children recite the alphabet and numbers was common mode of teaching. Multi-grade teaching was found to be common and in some schools elder students (Class 3) were leading lower classes and making the younger students (Class 1) recite numbers and the alphabet, and teaching the younger children was then reduced to just minding them while the teacher focused attention on the older children. PROBE observed that this strategy of giving less attention to the younger children also went with the widespread need for multi-grade teaching.[16]

To put this in perspective, as of 2013-14, around 11.5% of government primary schools were single-teacher schools.[17] On an average, there were 3.1 teachers per primary government school, compared to 8.8 in the case of private unaided schools.[18] Even if we assume that at least one teacher is needed per class, we need 5 teachers for the five grades. Hence, there is a shortage of two teachers in a typical public primary school.

In interviews with children, 43% of them reported having difficulties understanding their teacher and 59% said they had difficulties understanding their text. PROBE observed that many teachers did not speak the dialects spoken by children, and that all texts were in the official language of the state, which could be one of the reasons behind these difficulties. It also observed that the situation was aggravated by the lack of children's exposure to printed material in their home environments. Additionally, PROBE pointed out the lack of support systems at home, with 52% children reporting that they got no assistance.[19]

During interactions for the survey, parents expressed dissatisfaction with public schools, lack of teaching being the common complaint, which is in sync with the observations made in classrooms.[20] PROBE noted that this could the major reason for a shift towards private schools:

> "… The perception that government schools are "bad" and private schools "good"–whether well founded or not–has influenced the choices of some low-income families. There were families with even a small amount of extra money who reported that they felt compelled to send their child to a private school if they could at all manage it. The financial strain is then justified because of the belief that the child is attending a better school, or they are getting something for the investment. However the family cannot always sustain the financial demands and the child may be taken out of the private school in a short while.
>
> Considering the high costs of private schooling, it is not surprising, therefore, that private school enrollment was found to be weighted in favour of children from more advantaged caste groups, and children from families with more secure livelihoods. The financial burden associated with private schooling means that within some families distinctions are made, whereby the boys are enrolled in private and the girls in government schools. It is important to note that private schools have a higher proportion of parents with the capacity to use their "voice", based on their

> social and/or economic advantage. Looking at the reported expenditure on schooling, we also see that parents were providing much more support to a child in (a) private school with higher expenditure on each of the different components. These factors certainly contribute to the higher learning achievements that the 2006 Survey found among children in private schools."[21]

PROBE also observed that "while over 90% of children from SC and ST families were enrolled in government schools, they were not necessarily happy with the experience. Neglect of children from lower-caste groups in government schools is one reason for parents from these groups enrolling one or more of their children in private schools if they can afford it. This was also possible because the fees in some private schools were as low as Rs.30 per month."[22]

The shift towards private schools in rural India is reflected in ASER results too. ASER 2014 finds that the percentage of children of age 6-14 enrolled in private schools has gone up from 18.7% in 2006 to 30.8% in 2014. Table 2.3 shows the proportion of children enrolled in private schools for some states.

**Table 2.3: Enrollment of children in private schools in select states (%)**

| State | % of children enrolled in private schools (private & private aided) |
|---|---|
| Andhra Pradesh | 54.83 |
| Assam | 30.97 |
| Bihar | 18.31 |
| Chhattisgarh | 23.56 |
| Gujarat | 43.10 |
| Haryana | 53.41 |
| Himachal Pradesh | 37.16 |
| Jammu & Kashmir | 53.16 |
| Jharkhand | 23.38 |
| Karnataka | 50.25 |
| Kerala | 79.28 |
| Madhya Pradesh | 31.04 |
| Maharashtra | 60.58 |
| Odisha | 23.90 |
| Punjab | 50.17 |
| Rajasthan | 49.09 |
| Tamil Nadu | 59.97 |
| Uttaranchal | 53.78 |
| Uttar Pradesh | 54.31 |
| West Bengal | 11.89 |

Source: Accountability Initiative.[23]

We observe that the prevalence of private schooling is diverse across states. It is as high as 80% in Kerala and as low as 12% in West Bengal. There is 50% or more enrollments in private schools in more than ten states in the list, which includes large and populated states like Uttar Pradesh, Andhra Pradesh, Tamil Nadu and Maharashtra. It is interesting to note that West Bengal is one of the least spending in terms of per-capita expenditure (Table 2.1), has lowest proportion of students enrolled in private schools (Table 2.13) and also has highest proportion of children attending private tuitions (74%).[24]

Finally, PROBE observed that efforts to improve school functioning are faced with a number of hurdles, including highly unionised and politicised teachers enjoying considerable protection, and little support to teachers in the challenging task of educating first-generation learners. It mentions that irregular attendance of students (demand-side issues) along with the problems cited above (supply-side issues) lead to an alibi system of blame games, without recognising the need to work at changing the situation.[25]

In the first half of our journey, we took a bird's eye view of school education. We observed a range of issues starting from teacher absence, low teaching activity, and multi-grade classrooms, to parents' dissatisfaction with government schools. We also noted some important statistics regarding education, monetary and time investments, extent of scale of the problem, prevalence of private schools etc. Let us start the second half of the journey, an exploration of the ground zero of education—the classroom.

## Ground zero

In this part of the journey, we shall observe a classroom from the perspective of a teacher to identify issues and simultaneously examine policy implications.

During a school visit you can overhear this refrain among teachers: "I have to complete the syllabus." They are under constant pressure to complete the syllabus. It is interesting that the even when national discourse seems to be on learning outcomes, teachers are still being questioned on completion of syllabus and not on ensuring learning. The fixed syllabus and time define curricular pacing, or the pace at which a teacher teaches concepts.

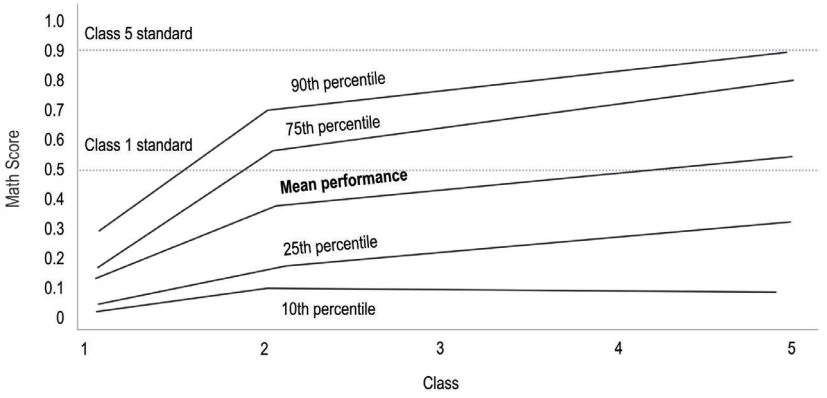
Fast curricular pacing affects children in two ways. One, children who do not follow the concepts are left behind in the absence of remedial support. Two, children who are absent for a few days cannot follow the concepts later, and hence fall into the same trap. It is postulated that "all of the observed learning differences between poor performing and OECD countries could be accounted for only by an overly accelerated curriculum in poor countries–even if the countries have exactly the same potential of learning."[26] It is important to ask, why are children falling behind, but a more important question to ask is, why should curriculum be over paced and what is point of over pacing curriculum if children are not able to cope up. More fundamentally, what is the purpose of curriculum—to help children learn or merely a task that has to be ticked off a checklist, regardless of its utility?

One way to address this is to rethink the monitoring procedures for teachers. A typical head teacher in a government school evaluates teachers on their adherence to the syllabus timelines. Inspections by higher officials also involve questioning on the completion of syllabus. We can replace this with an outcome-oriented monitoring, focused on whether students have achieved required levels of proficiency. The discourse needs to be changed for teachers as well, focusing on learning outcomes rather than syllabus completion.

The other way is to reduce the syllabus in primary classes to first ensure that all children have basic numeracy and language skills (reading and writing). If it is clear that as of today many students do not have basic reading and numeracy skills, having lengthy syllabi and pressurising teachers to finish the syllabus is not going to help. Teachers can be given small goals and ensure that basics are in place before moving ahead. There is evidence suggesting that when teachers are given simple goals, they tend to be more effective.[27]

Let us now assume that you as a teacher are allowed to slow the pace at which you teach the curriculum. If you start teaching at that pace, you will soon realise that at any point, there is a spectrum of students ranging from those who understood the concept to those who did not. We thus observe that there are two competing paces in a classroom: the pace of teaching and the pace of learning. When there is a difference in the two paces, the below-average students lag behind and those above the average may feel bored. We earlier discussed evidence on proportion of students by learning levels, for a given grade. Let us take a fresh look at Figure 1.1, which depicts the classroom profile of students as per their learning level.

**Classroom profile of students as per learning levels (classes 1-5)**




Source: Muralidharan & Zieleniak (2013).[28]

Imagine a classroom of ten students. This graph suggests that out of ten children in Class 5, you are only reaching out to one of them, the only one at grade level. The other nine are virtually unable to understand or process anything. In a normal scenario, added to this is the fact that teachers are teaching to complete the syllabus in the limited time that they have, regardless of whether the children are able to cope. Also, remember that the remaining nine children have weak academic support systems at home. Thus, our current system benefits only students in the top percentile of the classroom, leaving out the rest. In this context, external interventions aiming at the class level of the children also tend to benefit only the top percentile, because other students are not capable of utilising them. A study conducted in Kenya, in which free textbooks were distributed to students, showed that the test scores did not increase for an average student.[29] However, students who were in the top percentile of the class achieved the largest gains, corroborating the phenomenon discussed above in a different context.

In order to address this problem, we need to teach students to their learning level. We can do this by dividing students in the same class into multiple groups as per their learning levels and teaching them accordingly. Studies conducted in India in government schools using this methodology, popularly known as Teach at the Right Level (TaRL), showed significant improvements in students' learning levels (numeracy and reading).[30] Alternatively, when one has to divide an overcrowded class into different sections, students can be divided as per their initial learning levels instead of doing it randomly. An intervention administered in Kenya on similar lines showed significant improvements in learning levels of these children compared to those with no segregation based on learning levels.[31]

We must note that methodologies like Teaching at the Right Level are themes and a lot has to be worked out to implement it in classroom. There are also various possible ways of translating these themes into implementable processes in a classroom. The challenge is to design processes that are not too cumbersome for a teacher, and training and supporting teachers to help them implement it in the classroom. Sometimes this can also involve

nudging teachers out of their long-held beliefs and the practices they are accustomed to, and to encourage them to try new ideas. Aspects like these call for innovation in pedagogical practices and strong training and support structures for teachers.

The other important demand that teachers have to address to, in a classroom, is helping students who did not understand concepts or have misunderstood them. In a typical scenario, if a student comes to a teacher expressing difficulty in decimals, in most cases the teacher ends up teaching the concept of decimals from scratch. Contrast this with the approach of a doctor. If you are down with fever, the doctor does not prescribe the same medicine for fever given to someone else. He will diagnose the type of fever and treat you accordingly. But if a student does not understand a concept, do we make a granular diagnosis like the doctor and give customised treatment? Probably not.

The following example illustrates the importance of such diagnosis and remediating accordingly. Suppose a student answers that $4.73 > 4.8$, what could be the possible reasons? The student might have ignored the decimal and considered the numbers as 473 and 48 and hence answered $473 > 48$, or the student might have first considered the number to the left of the decimal, 4 in this case. Since it is the same for both the numbers, the student might have then considered 73 and 8, since $73 > 8$, overall $4.73 > 4.8$. There could be many other possible reasons, some that we know and some that we do not. Though the answer could be incorrect for many students, each of them did so for different reasons and each requires a different remediation, or customised treatment. It is not just the issue with students who have answered it incorrectly. Even those who have answered the question correctly might have done so but for an incorrect reason. In this case, students might have considered 4.73 and 4.8 as $4 + \frac{1}{73}$ and $4 + \frac{1}{8}$. Since $\frac{1}{8} > \frac{1}{73}$ , they might have concluded that $4.8 > 4.73$. It requires multiple questions and probing to diagnose such difficulties. These are not theoretical scenarios. They are carefully documented in studies observing children's difficulties while learning decimals.[32]

Similarly, instead of just asking students to calculate 15 x 13, one can ask, by how much is 16 x 13 greater than 15 x 13? If student calculates both the products and then takes their difference to answer this question, then student may not have understood conception of multiplication appropriately. Teacher may then have to intervene and guide accordingly.

Thus, when a student commits a mistake, it is important for a teacher to probe the student to understand the root cause for misunderstanding (granular diagnosis) and then remediate appropriately (customised treatment). The sad part is that some teachers do not have minimum competencies, leave alone doing granular diagnosis. For instance, SchoolTells survey which surveyed teachers in UP and Bihar finds that only 28% of teachers could correctly do an area problem which is usually introduced in grade 4 or 5 in these states and only 25% could do a percentage problem at grade 5 difficulty level.[33]

Technology can play a great role in assisting teachers with this function. If teachers were to do it, they would have to design customised assessments for each child and spend lots of time analysing the patterns of mistakes, which may not be feasible for a single teacher to do. It is easier to do this through technology. A technology product can analyse students' responses on a set of questions and give an automated report to teachers on the learning difficulties being faced by students in their class. After diagnosing the problems, students have to be helped regarding the same. If all students are not facing the same type of difficulties, each of them needs a different type of remediation. This again is an intensive and time-consuming process for a single teacher to do. An intelligent technology tool can do this and send related reports to the teacher.[VI]

One may argue that such a diagnosis is unnecessary because students will learn these concepts with time.[VII] This may be true for students who sustain motivation for long periods, and can carry on committing mistakes.

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VI Refer Appendix I for broader discussion on technology in school education

VII Refer Appendix II for discussion on criticisms of learning assessments.

In contexts where either the student motivation is low or there are weak support structures at home, such hurdles can affect students' confidence, thereby leading to slackness and in some cases disinterest towards studies or dropping out from school altogether. Diagnosing difficulties early on can prevent students from reaching that stage. Hence, at least in the initial few years, such plugging of gaps may be required. Additionally, exposing students to such new situations where they are allowed to commit mistakes can help change the thinking process of children and if they can learn from these mistakes, it will help them strengthen their concepts.

It is also possible that some of the difficulties discussed above arose because of the way the concepts have been taught. For instance, if fractions are taught as 2 cars out of 5 is $\frac{2}{5}$ , it can become difficult for some students to comprehend $\frac{4}{3}$ , 4 cars out of 3? Teachers should be aware of such issues so that they can be taken care of while teaching. For teachers to know such appropriate pedagogical practices and for also diagnosing the root cause of students' mistakes, we need to have a body of knowledge which documents the difficulties faced by students while learning. Teachers should then be trained appropriately and helped in integrating them within teaching practices. This illustrates the need for investments in research in this area and a strong necessity for training and support structures.

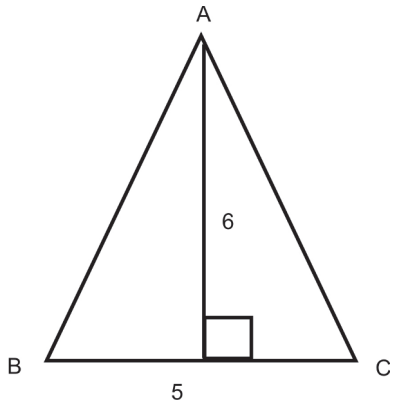
A related aspect to such assessments is intra-school assessments. Schools usually conduct exams once in a month or quarter, generally called as unit tests, term exams. The aim of these exams is not necessarily to diagnose students' difficulties but to evaluate their understanding. Preparing question papers for these exams is another important part of the job of a teacher. We observe that questions in these exams are often asked directly from textbooks (exercises behind the chapters) and hence students try to memorise those questions as part of their exam preparation. This indirectly promotes rote learning. To address that, we may need to design these papers better, with questions that test actual understanding of children. The design of a question can make a lot of difference. Consider these examples:

Q.1: What is the formula for the area of a triangle?

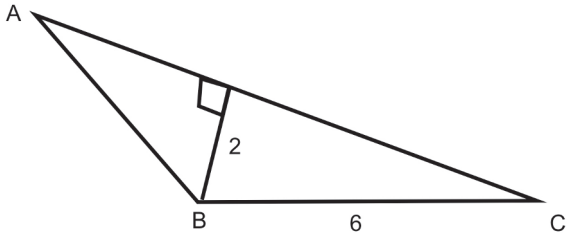
Q.2: If the height of a triangle is 2 units and the length of the base is 5 units, what is the area of the triangle?

Q.3: If the area of the triangle is 20 units and the height is 2 units, what is the length of its base?

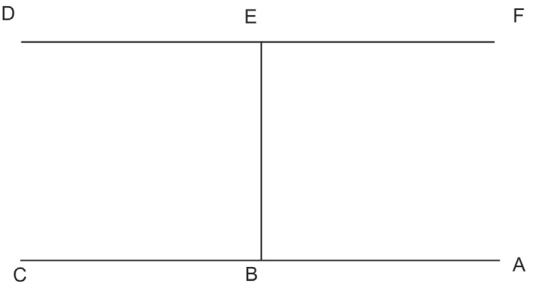
Q.4: What is the area of the triangle ABC shown in the figure below?




Q.5: What is the area of the triangle ABC shown below?



Q.6: An ant finds a sweet placed at point A on a tiled floor with square tiles. The length of side of each square is 4 units. Ant wants to transfer the sweet to its house at point D, by transferring small pieces in multiple trips. In its first trip, it travels from point A to point B where it learns the law of shortest distance from another ant. It then takes the shortest route from point B to point D and then returns to point A through the shortest route. What is the area of the shape formed by the traces of the ant's path in its first trip?




The first question asks to mention the formula, which can be reproduced from memory. The second and third questions check calculation or substitution of numbers in given formula. The fourth question asks the same in a pictorial format. The fifth question tests the concept of area of the triangle–the meaning of height and base in its formula. The sixth question requires comprehension skills and identifying the height of an obtuse-angled triangle (distance between the parallel lines in this case) in order to calculate the area of a triangle. All these questions test the concept of area of a triangle as one of their objectives but in varied formats and hence test students' understanding at different levels. Such carefully designed quality intra-school assessments can set standards and signal students about expectations from the system. Thus, in addition to disseminating information on difficulties faced by students and on appropriate pedagogical practices, we also need to build this skill of framing good questions among teachers.

Till now, we have discussed the need to slow the pace of curriculum, the need to teach to the right level of the students, diagnosing and remediating their difficulties appropriately, designing quality assessments and the necessity for strong training and support structures for teachers. Even after we do all these, as a teacher, one may realise that students need help and guidance after school. Lack of support systems at home is one of the main differences between first-generation learners and others. In the absence of such systems, it may get difficult for some students to catch up with concepts taught in classrooms. We earlier discussed that earlier the gaps generated in early ages only widen with time.

India Human Development Survey (IHDS) tracked 9,000 students from ages 8-11 to 15-18. It finds that learning outcomes at early age are closely linked to subsequent educational achievement. For instance, only 10% of students who could not read simple words at age 8-11 completed grade 9 seven years later, where as 60% of the children who could read a large grade 2-level paragraph at same age, could complete 9$^{th}$ grade.[34] It also finds that the effect is not uniform for students of all backgrounds. When children fall back, students from privileged background are able to overcome such roadblocks while those from less privileged backgrounds fail to do so.

Strong support systems can prevent this from happening. Parents and teachers surveyed by Central Advisory Board of Education (CABE) sub-committee on Continuous and Comprehensive Evaluation (CCE) & No Detention provision, also identified lack of academic support and guidance as the major reason for failure of children.[35] Places like Hong Kong recognised this need and have started implementing after-school support systems to help first-generation learners.[36] These support systems are called by various names—remedial centers, tuition centres, study hours and so on. They are prevalent in India too, with around 24% of primary school students attending tuitions and with states like West Bengal having rates as high as 74% of their children enrolled in such centres.[37] Evidence on the effect of private tutoring systems is also encouraging. Analysing the learning levels of students surveyed by ASER and enrollments in private

tuitions, a study finds that private tutoring in India has "a large positive effect on test scores of math and language (separately or combined) for students in the age-group of 6-14 years. The effect is as large as an additional year of education or the effect of attending a private school instead of a government school." Further, "the effect is stronger for disadvantaged students–those who are less wealthy, and those whose parents are relatively less educated."[38]

Ensuring support structures is thus essential for child's learning, especially first generation learners. Support systems need not always be outside school hours. However, such systems typically have the following characteristics: i) They are local/close to students' residences; and ii) they are able to provide relatively more individualised attention than a classroom. The government can choose the design and implementation model, the location and so on, based on context and feasibility.

One approach can be to provide teaching assistants to teachers. Professor Karthik Muralidharan of University of California, San Diego outlined a proposal to provide each public school teacher with two teaching assistants recruited from the same village as the school.[39] These teaching assistants would have an "explicit mandate to focus on first generation and weaker learners and to provide small-group instruction that is tailored to their current level". The teaching assistants will serve for a period of four years when they receive on-going training, after which they can be recruited into the regular track, conditional upon good performance; necessary qualifications; and clearing the examinations. Those who cannot do so will receive an amount of Rs.1,00,000 and will be relieved from the job. Professor Muralidharan argues that this can serve as a good entry point for individuals interested in pursuing a career in teaching. It can be effective if the performance of candidates has implications for their future, and can help ease significant loads from regular teachers. We may observe that since the teaching assistants are from the same village and also work in the same school along with a regular teacher, they can get mentored and trained by them. This approach also ensures that all public schools are covered.

However, there can be certain constraints with this approach: i) Teacher recruitment and training is a cumbersome process and the demands are generally not met, and this recruitment procedure might meet the same fate; ii) training for teaching assistants through government machinery can face the same problems as the current teacher training programmes; iii) the presence of two assistants in the classroom to take care of the children can provide an additional incentive for regular teachers to not attend the school; and iv) it excludes students going to low-cost private schools who may require similar support.

Another approach can be to use vouchers for after-school support systems. Parents with school-going kids can get a voucher to ensure after-school support to their children. Parents can avail these vouchers at appropriate service providers. If needed, service providers can also be accredited or rated. Apart from arguments of choice and usually cited in support of vouchers, there are other strong reasons to go for vouchers in this context.

Education as a sector is starved of innovation. For instance, proposals like teaching at the level, continuous assessment are broad ideas but the challenge is to design the process so that it is not too cumbersome for teachers, at the same time addressing the desired goals. It needs innovation, and hence need multiple players to be part of the process. Vouchers for support systems can help build up this eco-system.

Unlike regular schools, after-school support systems do not have huge infrastructural requirements and are out of the ambit of RTE. So it is easy for service providers to scale up once they have their pedagogy in place, thus creating incentives for people to enter this space. Such a system also does not pose any threat to the existing system of teachers and hence there is little political economy associated with it. This exercise will also serve as a pilot for the broader school vouchers and help test the exaggerations and scepticism about the voucher approach in general.

Certification, monitoring and rolling out vouchers/cash transfer can act as possible hurdles in this approach. Private entities may also not reach

all geographical areas. More importantly, unlike teaching assistants under the monitoring of a regular teacher, the private tutors might end up just making students complete their homework, because it is the most popular demand from parents.

Owing to such complexities, technology-based support systems are getting popular. We earlier discussed that technology can be used to diagnose students' difficulties and remediate them accordingly. Similarly, it can be used to help students learn concepts after class hours. In a scenario where many students are behind their grade level in terms of learning levels, such technology is expected to provide individual attention to the child and teach at their level to bridge the learning gaps. We may need advancements in research in pedagogy, neuroscience and related fields to be able to do this with precision (which makes the case for investments in this area) but it is an approach worth trying out at least in teaching basic skills, where there is not much complexity involved in the process.

There are strengths and possible constraints for each of these approaches. The decision has to be taken by the governments based on what they think is easy to implement. It may also not be possible to use the same approach for all geographical locations and a mixture of these approaches can be used. For example, urban areas with a higher density of students hold greater possibility for private service providers, where vouchers can be implemented; teaching assistants can be recruited for interior rural villages.

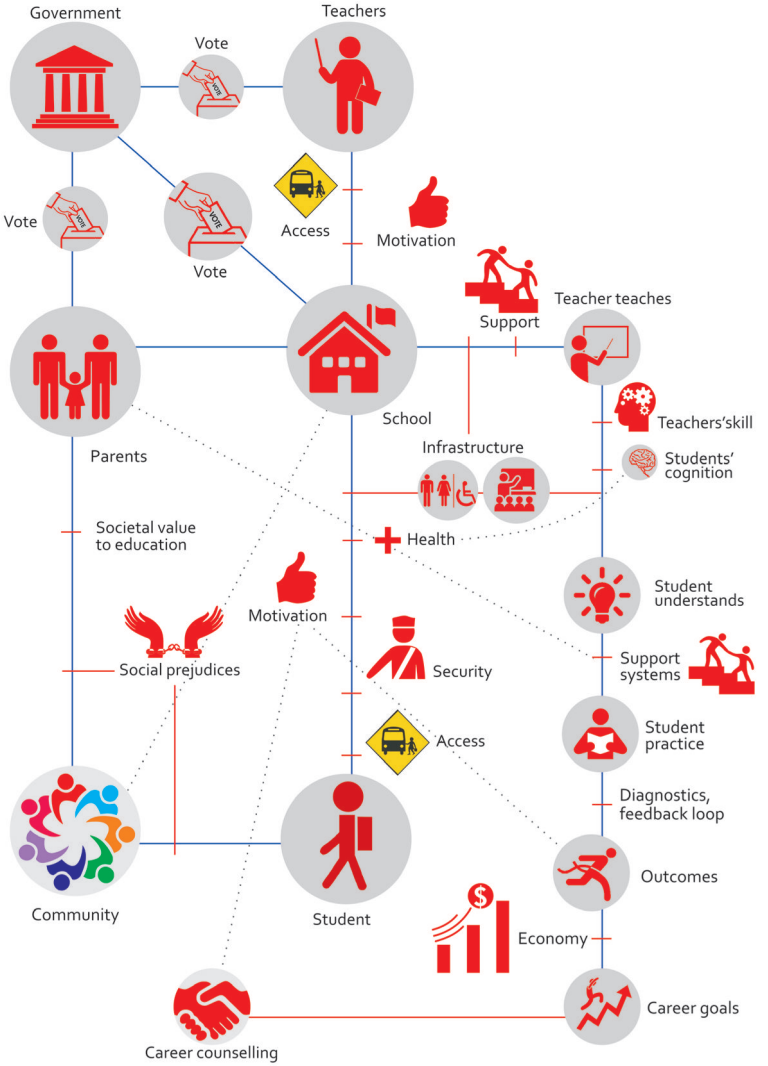
The modes of implementation may vary but the initial and important step has to be the recognition of the need for support structures.

# 3

# THE REALISATION

We have spotted numerous gaps in our long journey across the school education landscape, both from a macro (bird's eye view) and a micro (ground zero) perspective. At the macro level, we identified issues of teacher absenteeism, lack of infrastructure, inadequate number of teachers, shortage of learning material for students, and lack of appropriate teacher training. While at the micro stage, we realised the importance of diagnosing children's difficulties, teaching at the level of the children, the need for investments in pedagogy, and for support structures for children outside the school. There are certainly many more issues related to school education—the health of children, environment at home, parents' motivation, and social inequalities that get reflected in the classroom, for instance. All these factors, together with many others, can impact the learning of a child directly or indirectly. We can depict all these factors and interlinks between them in the form of a chart (Figure 3.1).

**Figure 3.1: Education diagnostics**




Let us understand Figure 3.1. A child who wishes to go to school faces concerns of access, security and health, along with intrinsic factors such as motivation. Similarly, teachers may also face issues of access and motivation to attend the school. Once both of them are in the classroom, the teachers' skill and the child's cognitive abilities can act as roadblocks

in helping the child understand. Even if these road blocks are conquered, a child requires support systems outside the school to achieve outcomes. Once outcomes are achieved, the state of the economy can be a roadblock in realising their career goals.

On the other hand, the community is connected to the school, and can hold it accountable for these outcomes. Societal value of education and prejudices in the community also influence parents' and students' choices. Finally, there is the government, connected to parents and teachers through votes. This represents the political economy of education.

We may thus add more aspects to this chart. This representation helps us to visualise the problems, understand the dynamics of the learning process and get a comprehensive picture of the education ecosystem. We can then use the education diagnostics chart to mark problematic areas and work on them. Let us consider some problems identified in our journey that are on Figure 3.1 and examine the question—does addressing these problems result in outcomes?

Let us consider infrastructure. Understandably, the lack of infrastructure and access to schools was a major visible problem a few decades back. Access to school is one of the primary prerequisites for educating a child; after all, how can you educate children if they do not even have access to school? Over the years, we have addressed this problem significantly but did it improve the outcomes? On a macro level, one could argue just by looking at the learning outcome surveys (ASER and other reports) that even though the infrastructure problem no longer exists (at least not as severe as before), we see little improvement in results. We can also examine this from a micro level. Two surveys conducted in 2003 and 2010, across a sample of schools in 19 states, found that during 2003-10, in these schools, pupil-teacher ratios had fallen by nearly 20%.[40] The fraction of schools with toilets and electricity had more than doubled (from 40% to 84% for toilets and 20% to 45% for electricity); the proportion of schools with functioning mid-day meal programmes had nearly quadrupled (from 21% to 79%). The survey findings illustrate a significant improvement

in infrastructure and facilities, but it also finds no correlation between changes in average village-level school infrastructure and student test scores. In other words, even after addressing what was seen few years back as 'the' critical problem that needs to addressed, we found no change in outcomes. It does not mean that infrastructure should not have been built, but it suggests that there is more to the problem than just infrastructure.

Earlier we noted the observation of the PROBE report that many students had little exposure to printed material at home, making it difficult for them to acquire skills. An intervention in Karnataka provided schools with several books and a librarian, but the evaluation of this intervention found that it did not improve the test scores.[41]

Let us now take the example of a problem observed at ground zero. We discussed the need for low-stake continuous tests to identify children's difficulties and address them, so that the learning gaps can be fixed early on, before they become too large. Right to Education Act, 2009, mandates Continuous and Comprehensive Evaluation (CCE), which aims to achieve a similar purpose. An evaluation conducted in Haryana suggests that CCE, in the form in which it was then, had no effect on the learning outcomes of the children in those schools.[42]

We also discussed the need for investments in research on pedagogy. We certainly need more research to be done in this aspect. It is not that we have done nothing regarding this aspect till now, but still, as PROBE documents, reading aloud from the textbook is the most prevalent form of teaching. Why did the research not percolate to the teachers?

These experiences should make us pause and introspect. We observed the problems from our experience, marked them in the 'education diagnostics' chart, and assumed that addressing them one by one would improve the situation. Evidence discussed above suggests that this need not be the case; solving some of these problems is not resulting in improvements. Perhaps we need to rethink our framework for understanding problems; maybe there is more to the 'education diagnostics' chart, in addition to the visible individual problems.

This situation is analogous to diagnosing and treating human medical ailments. We may have identified dysfunctional organs and given appropriate treatment. But what if the organs do not work? Maybe the person is dead and we are treating a dead person. In other words, even if organs are healthy, there is an underlying element that makes individual organs function and coordinate with each other, the soul, absence of which leads to dysfunctional organs. Similarly, in our case too, apart from the visible problems marked in education diagnostics chart, there may be an invisible underlying element which is responsible for functioning of these elements and holding them together. The underlying element of our framework can be visualised in the form of glue that holds the individual elements of our chart, and is responsible for their functioning. Let us call this invisible glue 'state capacity'—a new element in our framework, the soul of our system. The question however is – is the glue or state capacity, reason for non-manifestation of outcomes?

State capacity in concrete terms can be defined as the capacity to design and implement rules or policies. Measuring state capacity and the various approaches for the same is the subject of active on-going research in academia, which is beyond the scope of this book. Our aim is to explore if state capacity, rather the lack of it, is the major constraint leading to non- manifestation of outcomes. We can test this by examining if there is lack of state capacity and if it is so, its effect on outcomes. If there is lack of state capacity, or the inability to design and implement policies then it can manifest itself in several forms.

Teacher attendance and their efforts are a visible manifestation of extent of strength of state capacity. PROBE 2006, as mentioned earlier, had observed that at the time of the survey team's unannounced visit, teachers were found absent; some were sipping tea, knitting, or simply chatting.[43] This is a classic case of weak monitoring, which reflects weak state capacity. We also discussed a survey of a nationally representative sample of villages, which found that during the team's unannounced visits, 25% of teachers were absent from school and only about half were teaching.[44] Weak state capacity manifested through this form has direct impact on

children's learning. How can a child learn if teachers do not attend school and teach them? Apart from that, the fiscal cost of such absence in India is estimated to be at around $1.5 billion per year.[45]

If capacity to implement is weak, it should be manifested in fund flows and process efficiencies. The PAISA study_conducted by Accountability Initiative, which documents fund flows to schools, finds that, on average, just about half of India's schools had received money by November, which is half-way through the school year.[46] Weak state capacity manifested through this form hampers planning processes in the school and community participation.

Another manifestation of weak state capacity is in the lack of coordination among decision-making structures, resulting in inefficiencies. Yamini Aiyar, Director of Accountability Initiative who led the PAISA project says:[47]

> "All critical teacher-related decision-making, hiring and salary payment for example, lie with the state administration. Funds for infrastructure development are often channelled to schools; however, key decisions related to implementation—sanctions and procurement are taken by the district administration. While the district (administration) takes implementation decisions, priorities on the nature of infrastructure to be created are set by the state government, often in response to pressures placed on it by the Government of India (GOI). For instance, in 2011, the Supreme Court of India issued an order requiring that all schools meet the RTE norms for girls' toilets by the end of the year. This resulted in a rush of activity in many states to initiate toilet construction. Orders were issued to districts, which in turn directed schools to start construction."

> "In a school in Nalanda, Bihar, the headmaster had received a grant for building a boundary wall in 2012. When asked "When did you make the request for the wall?" here's what he told our researchers: he never did! The wall was sanctioned at the state level based on DISE data, and finalised at the district level.

> Asked if he was satisfied with the way the civil works process was conducted, he shrugged his shoulders and said, "The wall is built, this is good. But the main problem here is the lack of clean water as the children get sick. We do not know who to talk to about this. And honestly, the DISE form does not ask us for this information."

The lack of clarity of roles, overlap of decision-making powers, external distortions, and a mismatch between demand and supply seem to plague the management practices which are clear manifestations of weak state capacity.

Moving ahead, another simple yardstick to test the strength of state capacity follows straight from its definition (ability to make rules/policies and implement them) — consider ideas that are perceived to be essential in theory, and see how they are transformed into rules and subsequently put into practice. For instance, consider the idea of low-stakes continuous testing to plug learning gaps. Earlier, we discussed an evaluation conducted in Haryana, which suggested that CCE—in the form in which it was then-had no effect on the learning outcomes of the children in those two districts. The Central Advisory Board of Education (CABE) subcommittee report on CCE documented the issues in implementation of CCE.[48] It documents the difficulties faced by teachers in implementing CCE, in order of severity as (i) inadequate skills to conceive and design projects and activities; (ii) lack of adequate resource support; (iii) absence of clear-cut guidelines; (iv) lack of adequate training; and (v) textbooks not amenable to CCE. The CABE subcommittee also observes that administrators cited lack of adequate training and support and required materials as reasons why CCE should not be implemented.

Absence of clear-cut guidelines and textbooks not being amenable to CCE is manifestation of a lack of capability to design rules; the lack of support, training and other observations made by the CABE report are clear manifestations of lack of capacity to implement the designed rules. Teacher absenteeism and lack of efforts by teachers are only visible forms

of weak state capacity. Other policies like CCE may also be needed apart from ensuring teachers' presence to be able to achieve the final goal of ensuring learning outcomes. Weak state capacity manifested through this form affects outcomes by hindering fruits of policies that should have reached students.

A challenge in examining the effects of state capacity is disentangling the effects of people and the environment in which they work. People may be competent but the environment in which they are working may be posing constraints in functioning effectively. We can disentangle this by considering a programme and seeing the result of its implementation both inside and outside the regular system. If we observe that the programme shows results when teachers implement it outside the regular system and not while they implement it in the regular system, it shows that teachers are constrained by the rules and incentive mechanisms of the environment in which they are working in. A series of evaluations on Pratham's Read India programme tested something similar. When teachers in regular system were trained in Pratham's methodology with appropriate support and also learning materials to children, the programme did not show any improvement as compared to normal schools which did not receive these. On the other hand, when teachers taught students using the same methodology but outside the school (during summer break), it showed significant improvements in learning levels of children.[49] As discussed, this illustrates the complexities, constraints and misaligned incentive mechanisms embedded in the system in which teachers are working, an issue of state capacity.

Along similar lines, a study conducted in Andhra Pradesh explored the effect of incentive mechanisms within regular system. In this study, researchers provided diagnostic information to teachers about children's performance.[50] The idea was that if teachers knew the precise status of learning of children, they might be able to cater to their needs better.

Teachers of one group of schools received such low-stake diagnostic information and teachers in another group did not. A comparison of results of students in both groups showed no difference in performance. But could this have happened because the diagnostic information was not appropriate?

There was another group of schools where teachers were provided 'feedback' along with performance-linked (as measured by student learning) pay. Students in these 'incentive' schools performed significantly better. This need not mean that the diagnostic information alone caused the effect, but it suggests that this information was appropriate and useful, and was put to proper use only when teachers were given incentives. This illustrates the untapped potential in teachers not being put to use due to the lack of appropriate incentive mechanisms in the system.

We earlier observed that a programme successfully implemented outside the system did not yield the same results when implemented in the regular system. It can be argued that this could be because there is no commitment and monitoring pressure from higher officials. We can test this hypothesis by examining a successful programme attempted for institutionalisation into the regular system. Taking a cue from the encouraging results of the TaRL programme,[VIII] an enthusiastic district collector implemented it in the Jehanabad, Bihar, with the support of Pratham.[51] Using this experience, a programme called Mission Gunwatta was attempted to scale up the pedagogical innovation in the state of Bihar. It was implemented spiritedly for some time but faded out when the leadership changed.[52] This illustrates a different set of issues: challenges in institutionalising a successful programme and maintaining the focus and motivation in the long term—an issue of state capacity.

We thus observe that in the current scenario we are not able to ensure basic prerequisites for learning, like teacher attendance. We are also not

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VIII **Teach at Right Level (TaRL) groups children as per learning levels and teach them,** rather than grouping them by class or age level.

able to translate essential ideas into policies and properly implement them. Programmes, which are successful outside the regular system, are failing when implemented in the regular system. Even when we attempt to institutionalise the innovations, which work outside the system, with commitment from higher authorities, we are unable to do so, on a long-term basis. All these together have resulted in a deadlock situation where we are not able to pursue any meaningful reform. It suggests that the invisible element of the 'education diagnostics' framework—state capacity—is not strong in our context and its weakness is acting as a critical constraint preventing us from improving learning outcomes.

After several learning assessment surveys shed light on the reality of learning outcomes, the focus of education reform has been on shifting the priority from infrastructure to learning outcomes. After acknowledging that learning outcomes should be the priority, the next step has been to diagnose the issues that are to be worked upon. Such diagnosis leads people to one of the elements of the education diagnostics chart. For instance, many often come to the realisation that teacher is the essential part of the process and there lies the problem. Some others argue that school leadership is the critical aspect while some others argue that quality of assessments is the issue and some may cite concerns of political economy. Essentially, the discourse on reform has been a discourse on identifying the appropriate priorities and alerting people to recognise the importance of those priorities. Inherent to all these arguments is an assumption that getting these priorities correct will lead to outcomes.

Uncovering priorities is important and we may have uncovered enough broad priorities by now. We may have to now step back a bit and ask ourselves—there may be definitely some aspects that are not recognised and not prioritised as much as they should be, but what happened to the aspects that are already recognised? If lack of recognition or prioritisation of certain issues is the crucial problem, as we all seem to assume, then the aspects that are already appropriately recognised and prioritised should have resulted in some effects. As discussed above, the examples of CCE, Mission Gunwatta and many others, even the aspects that are recognised

and prioritised are not being effective or sustainable in the long term. What is the guarantee that the other aspects that we are advocating for, also do not reach the same fate after getting recognised and prioritised?

It is similar to a situation where several concerned people are trying to figure out the problem with a person lying on ground, unable to move. Some may start analysing the heart and call everyone's attention to that arguing that the heart is not working and it is "the" thing that has to be worked up on. Others may have started with brain or kidney or liver and everyone is calling attention to different aspects that they are analysing. The reality is that everyone is analysing a dead body where the crucial element of soul, the one which makes the organs function is missing. No amounts of advanced organ replacement therapies are going to work.

Similarly, as discussed, this soul in our context is the state capacity, the one which gives life to all priorities and keeps them alive. Merely getting right priorities or integrating a good idea into regular system may not solve problems. In other words, the question is not about importance of teacher training. It is about, why are we failing to administer effective trainings? It is not about importance of school leadership. It is about, why don't we have school leaders and what is hindering the process of developing school leaders? It is not about fast paced curriculum. It is about, why does it exist in the first place and how did it exist for such a long time without getting recognised and what is preventing it from being addressed? It is not about, what is the problem. It is about, why is that things are the way they are today? Clearly, the lack of realisation of these priorities is not the major issue as discussed earlier. The answer to all this is that the soul, which is responsible to take of all these things, the state capacity, is missing.

Fortunately, unlike medical treatment where it is not possible to revive the soul, we can do so in our context. If we do not recognise the issue of weak state capacity then we will end up repeating the mistakes – overwhelmed with the problem of lack of access, people earlier assumed that getting children to school will lead to outcomes and we are now assuming that getting our priorities right will lead to outcomes, without realising state

capability deficiencies. We may definitely realise and we will realise this few decades down the line if not now, but by then the demographic dividend would have turned into a demographic nightmare. The costs of inaction are very high and there is very less margin for error. So, it is important to realise the issue of weak state capacity at this stage itself and work on strengthening it along with bringing focus to the appropriate priorities.

## The 'not so critical' constraints

Sometimes it seems obvious that state capacity is crucial. One may not deny the need for capability to implement policies. It might make intuitive sense; some might even argue that no evidence is needed to make such an obvious point. However, it is not actually as obvious as it seems. The litmus test to test the realisation of the problem is to ask people what they think is the critical constraint in the current public school education system. The most common responses are about the individual elements of the 'education diagnostic' framework like infrastructure etc. We realised that though these are the visible problems addressing these alone might not result in outcomes and the reasons behind such problems is weak state capacity. At times, some issues beyond the individual elements mentioned in education diagnostics chart are also often identified as the critical constraints. The arguments here are also similar. Even after we address individual elements, these aspects are acting as critical constraints. They deserve examination before we can be confident about our claim that weak state capacity is 'the' constraint.

Asked about the evolution of the public school education in India, some comment that the government could not keep up with the rising enrollments and hence appointed contract teachers or para teachers. This led to de-professionalisation of education, negatively affecting the learning outcomes of children, and this is the major reason for the poor standards of education.

If para teachers are responsible for the poor outcomes of children, then the learning outcomes of students taught by para teachers should be lower

than those taught by regular teachers. A study compared the outcomes of children when taught by a regular teacher and a contract teacher (different subjects). It found that contract teachers actually produced better learning outcomes.[53] There is also evidence to suggest that contract teachers put in more effort than regular teachers, as measured by teacher attendance and engagement.[54] In another field study conducted in Andhra Pradesh, contract teachers were randomly allocated to a representative set of 100 schools to explore the effects. It found that contract teachers were no less effective in improving student learning than regular teachers who were more qualified, better trained, and were paid five times their salary.[55]

Thus, the hypothesis that hiring contract teachers led to poor outcomes does not hold against this evidence. The question to be then asked is—why are regular teachers not any better than contract teachers who are often paid only a fraction of the salary that regular teachers are paid? The answer again goes back to weak state capacity, a system that does not inspire people to contribute to their maximum extent.

Inadequate teacher salaries are also cited as a common reason for teacher absence and lack of efforts. One should note that the ratio of teacher salary to the per capita GDP for primary school teachers is 7.22 in India. This ratio is 1.19 for US and 1.03 in the much acclaimed education system of Finland.[56] The Indonesian experience of increasing teacher pay can give us some insights. A policy was introduced in Indonesia to permanently double the salaries of teachers. A large-scale evaluation of 3,000 teachers and 80,000 students carried out to test the impact of the salary increase on students' learning found that it led to no improvement in teacher efforts and student learning.[57] Thus, mere salary increases may not result in outcomes. If pay was the core issue, then in the study evaluating the effect of contract teachers discussed above, regular teachers would have performed better. This does not imply that teachers should not be paid well. It just means that salaries may not be the critical constraint.

It is also argued that passionate people are not entering the teaching profession and hence the quality is deteriorating. The interesting aspect

of this argument is that this is cited as a reason across sectors. One can replace the words 'teaching profession' with any other profession and it seems to hold true—passionate people are not entering politics and hence its quality is declining; passionate people are not entering the lawyers' profession, so the quality is declining; passionate people who care for the poor are not entering the medical profession and hence the quality is deteriorating.

The argument that entry of dispassionate people into the system is the core issue is misleading on two fronts. One, the focus on only passion as the crucial requirement assumes that the problem lies with the people and not the system**.** A good system is not one that relies on the extremes to perform; it is one which enables even average people to perform to their maximum potential. The current system is exhausting even for the extremes, leave alone bringing up the average. Two, as discussed earlier, even regular teachers are proving effective when working outside the system and programmes successful outside the regular are failing inside the system. This shows that lack of passion may not be a critical issue. One may not deny that it will be advantageous if passionate people enter the system as they serve as role models to inspire others but the fundamental question is—what is happening to all those passionate people (even if they are few) after they enter the system?

Going further, on a broader level, as discussed in the education diagnostics (Figure 3.1) chart, all the elements are necessary. Lack of any of these will result in them becoming a constraint. If all the aspects are important, why is it an issue if these elements are advocated and called as critical constraints?

In the general policy discourse, there is limited bandwidth for ideas. All ideas cannot get prominent space for public debate at the same time. Ideas which can manage to stay afloat in this crowded space of policy discourse for a long period often have a greater probability of being turned into policy. Hence, a number of people are striving for prominence of their ideas and to make them stay afloat in this limited 'discourse bandwidth'. While each of these aspects may be individually necessary, highlighting

superficial issues as critical constraints crowds out the space for the real critical constraints, weak state capacity in our context. There may not be readily available solutions to enhance state capacity, but they will only evolve if the idea manages to stay afloat in the discourse for a considerable time and we start thinking of acting on it. In the short term, the least we can do is to lessen the emphasis on the superficial reasons, pause before celebrating a pay increase, and give more space to the issue of 'state capacity' in the policy discourse, because the lack of recognition of this problem is itself alarming.

## Additional implications of weak state capacity – I

As we did till now, we can systematically examine each aspect that is put across as critical constraint and argue that it may not be a critical constraint, further exploration of which leads to weak state capacity as the critical constraint. In this discourse, we may portray effects of weak state capacity in terms of ineffective implementation of policies. This is only one of the visible manifestations of weak state capacity; it can affect us in other indirect ways too. Let us explore some such indirect effects.

First, weak state capacity decreases the return on investment. Governments make huge investments in resources but when they do not function properly, we end up wasting a great deal of money because it is not being put to proper use. For instance, government may recruit teachers but if they do not function, the money is essentially going down the drain. Pritchett and Aiyar estimate that with the existing inefficiencies of public school system, it would need an extra 2.78% of our GDP, or Rs.2,32,000 crore to be able to reach the learning levels of private schools in India.[58]

Second, weak state capacity shrinks the imagination of 'what can be achieved'. This, I believe is the most deadly of all. If government repeatedly fails to implement policies, overwhelmed by the implementation challenges, some may end up thinking that innovative models can never be implemented in public school systems. Over time, this perception gets ingrained into our belief systems and can limit our imagination to dream big. Education is too important to afford lack of imagination and innovation in its policies. Repeated failure also causes experimentation fatigue which then resists new innovations and any other new innovation may not be taken seriously while implementing. In short, prolonged situation of weak state capacity may kill the spirit of people and system.

Similarly, weak state capacity also kills good ideas and importance of prerequisites. For instance, continuous diagnostic evaluation of children's learning is necessary to help them. This idea is implemented in form of CCE and because CCE is not being effective mainly due to its design and implementation, some people have started arguing to stop CCE. In future,

any idea regarding continuous evaluation will be dismissed based on the experience of CCE, which is dangerous, without realising that the problem is not with the concept of continuous evaluation but with external factors. Such beliefs can hurt the system in long term.

Third, weak state capacity leads to complex policy traps and may force us to settle for second-best solutions. We often find heated debates on government vs. private provision of essential goods. Consider the example of provision of drinking water. If government cannot provide safe piped drinking water to the poor, they may end up spending huge amounts of money (in proportion to their income) to buy water through informal sources. In such contexts, some argue that allowing private players to provide water on behalf of government and charging money for the same is a win-win solution. The argument is that the poor are already paying high prices to secure water through informal sources and allowing private players would at least ensure water at a cheaper price. This proposal then leads to dissenting voices which argue that access to safe drinking water is a human right and it is government's responsibility to provide it for everyone. Hence one cannot allow initiatives which shift the burden to private players and financially burden the people. What do we do in such situations then? Making the government set up infrastructure and supply water may seem difficult and take long time. At the same time, relying on private provision, though better than status quo, is still a burden on the poor. This leads to a policy trap with difficult set of choices to choose from. The core reason behind this situation is the weak state capacity or government failure. If only government could effectively supply water in first place, all this would not have happened.

The situation is similar in the case of education. Government is not able to provide quality education and hence parents are moving their children to low-cost private schools, paying for it out of their own pocket. This is cited by some as the reason to rely on private schools as a means of ensuring best of the available quality; while others argue that low-cost private schools provide education of minimal standards as compared to the absolute standards and hence should not be relied up on. What to do

in such situations then? Strengthening public schools may take long time and students cannot wait till that happens. Pursuing alternate means of education, like shifting students to low-cost private schools might lead to financial burden on part of parents and they may have to end up settling for lower standards of education as measured on an absolute scale, though better than the status quo.

It leads to a complex policy trap where short-term or second best solutions may not be reliable and effective but at the same time long-term solutions are difficult to achieve. If only government had ensured quality education, such a situation would not have risen. Countries with good public education systems have managed to build strong public institutions and hence do not have to settle for second-best solutions, the way countries with weak state capacity are constrained to do.

These experiences thus illustrate the alarming negative effects of weak state capacity, which are not just limited to ineffective implementation of policies.

## Why do we gloss over state capability deficiencies?[IX]

Overwhelmed with the roadblocks in reforming existing schools and also looking at some well functioning public schools like Kendriya Vidyalayas and Jawahar Navodaya Vidyalayas, some propose that new model schools should be built in each district or a cluster (mandal). Some states even have constructed new model schools and recruited separate cadre of teachers for the same. This is symptomatic of the framework of education reform which glosses over state capability deficiencies and tries to imitate models without recognising the context. The quoted examples are different in context in the sense that there is self selection of students and work under different monitoring framework.

The problem with the existing schools is that of weak state capacity manifested in forms of teacher absence, lack of proper training and support, poor incentives, inappropriately designed implementation rules of policies and so on. Merely constructing new schools in the same system with different labels without addressing the critical issues may not solve the problem. These schools may also face the same problems as others and end up being as ineffective as others and additionally causing more harm in form of wasted money and efforts. Instead of being model schools, they may end up being models of policy debris depicting failure of policies. Unless we strengthen the capacity to do the critical tasks, new schools with different labels may not be of much help. Addressing issues in regular system by constructing new schools under different labels without trying to address capacity issues is equivalent to approaching the problem from the wrong end. We thus need a fundamental shift in the framework of reform and embrace a new approach which recognises the state capacity deficiencies and makes it an anchor for reform and not pursue ideas which gloss over the deeper malaise.

If state capacity is so crucial, why, then, do people not recognise it as a

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IX This title is taken from a blog post of www.gulzar05.blogspot.in, which discusses a similar theme.

prominent problem and is not part of the discourse on education? Why is it that solutions are mostly seen in terms of scaling up of innovations or technology or other broad policy ideas without mention of state capacity? Let us examine some possible reasons behind this.

1. *Bias towards the visible*: We tend to attach importance to aspects that are visible and striking. This can be with people both inside and outside the system. For people inside the system, if something troubles them constantly, because of this discomfort, they may exaggerate the extent of the bad effects of the issue and highlight it as a critical constraint in achieving outcomes—for instance, extra-academic duties for teachers, such as updating electoral rolls, conducting population census, and so on. It is possible that this is coming in the way of teachers' functioning, but some may overestimate its impact and perceive it to be the only critical constraint. When teachers are interviewed and they express the same discomfort, the issue gets carried over as the critical issue. Similarly, for those outside the system, if during a school visit they find that students do not have textbooks, one immediate response could be—this is sad, how can students read without textbooks? Some of these instances can be emotional for the person experiencing them and hence remain at the forefront for them; which can then occupy the precious space of discourse bandwidth.

2. *Ideas by example*: There is a saying in Telugu which transliterates as "*puli ni chusi nakka vaatha pettukunnattu*": On seeing a tiger, a fox burnt parts of its skin to mark stripes on its body to become as ferocious as the tiger. This simple saying captures the pitfalls of a common phenomenon, of basing arguments on examples and analogies. The issue of arguing merely with examples is that you can prove either side, by cherry-picking instances, depending on your objective. Such simplistic insights derived from examples can do more harm than good as they divert our attention to non-fruitful issues, occupying the scarce bandwidth of policy discourse.

3. *Need to be unique*: In a competitive discourse bandwidth and in the context of excessive analysis and paralysis of action where nothing seems to work, we may prefer to hear new ideas. People re-emphasising existing ideas

are not considered to be innovators or to be adding value to the debate. Surprisingly, this leads some to search for ideas, which sound unique, setting themselves apart from others so that they get space for themselves in the discourse bandwidth. These ideas often tend to be superficial.

4. *Disregard for abstractness–looking for actionable items*: 'Actionable solutions' is the commonly heard term in policy discourse. Politicians, bureaucrats, journalists, and most others prefer the 'actionable solutions'. In their urgency to act, people prefer to recognise problems for which there are concrete possible solutions, thereby neglecting the rest. They tend to mistake activity for progress. This bias fogs their ability to see the underlying core problems, which are abstract. The same is the case with state capacity.

Gulzar Natarajan, an in-service IAS officer, elaborates the reasons for glossing over state capability deficiencies as follows:[59]

> "Why do we consistently underestimate state capability deficit and see technology and other innovations as the solution to public policy problems?
>
> Consider three examples. One, using GIS to improve property tax. Two, technology interventions (GIS mapping, SCADA, smart meters and smart grids, etc.) or financial engineering of state balance sheets to reduce losses in their electricity distribution companies. Three, state-of-the-art regulation and processes to improve the effectiveness of regulatory institutions. All have been tried ad-infinitum not just in India, but across the world, with minimal success.
>
> It is not to say that these are not useful, but just that the underlying problems are fundamentally about weak state capability (at local government, public sector unit, and state/central government levels), and without at least partially addressing them, the fixes suggested will hardly make a dent on the problem. In all these cases, policy makers overestimate the contributions of technology

interventions and process re-engineering in delivering the desired policy objectives. In fact, there are at least six distinct biases that nudge us into embracing such interventions unconditionally.

1. *The desire for the tangible and conclusive*. It has become part of the social internalisation that everyone now views a policy intervention in terms of norms and components, clearly defined processes, time-lines, and a list of outcomes, all of which should form the basis for scaling up. Even when operational flexibility is afforded, the overall architecture is generally self-enclosed.

Unfortunately, most such policy interventions are transactional, requiring continuous engagement by officials at the cutting edge with other human stakeholders. Such engagements, the quality of which is critical, cannot be prescriptive and decreed into implementation. They require *capable and engaged individuals*, who are *sufficiently empowered* (with resources and operational freedom), to discharge their responsibilities in an *environment which allows them the freedom* to do so.

Given that all these assumptions are questionable in the median case, the scaling-up challenge becomes simply humongous. We need less prescriptive and uniform approaches to dealing with the problem. But such approaches involve providing considerable programme design and implementation autonomy with attendant delegation of responsibilities, which would make monitoring far more difficult (in fact, the current type of monitoring pretty much impossible) and outcomes less certain. In other words, this is an altogether different programme design, implementation and monitoring paradigm. It would need greater tolerance for failures and turmoil and adoption of more dynamic programme management approaches.

2. *The partial equilibrium bias*. In our problem solving moments, even when we are most logical, we rarely go beyond the first-order problems. Accordingly, once we can do a GIS mapping of

all the properties, the tax administration is reduced to a simple process of tagging and matching. This assumes that it is easier (than doing the same manually) to do GIS mapping and generate analytics, and then act on them to expand tax base and improve collection efficiency.

What if the implementation process of GIS mapping itself can be interminable (how many cities have completed even one iteration of city-wide GIS property mapping)? What if the process of constant updation of the GIS database can be a challenge (this assumes that the Town Planning guys have all the information available on the changes made to houses and new construction)? What if getting the tax collectors to act on the analytics may prove insurmountable (do we seriously believe that the bill collectors in their area or the Commissioner for the city as a whole already does not know about who are the big defaulters)? These, and many more, second- and third-order issues remain far from our thoughts when we support such interventions.

The neatness and simplicity of the partial equilibrium of the interventions, and the false sense of comfort that it provides, blinds us to the general equilibrium dynamics that are invariably generated and should necessarily be overcome for any such intervention to succeed.

3. *Convenience bias*. All of us are primed towards embracing something that appeals as neat and simple, and one which increases our convenience. For sure, GIS mapping and regulatory reforms appear very neat and simple, and are better than the existing systems to tackle the problem being addressed. It has always been the case that we demand "more and better, even when less is enough".

4. *Optimism bias*. It is always the danger that project teams underestimate the magnitude of the task entrusted and see the road ahead with more optimism than it should merit. Accordingly,

officials who champion a technology or process intervention are instinctively likely to underestimate the problems and over-estimate their chances of success.

5. *Doing-something-new (or innovation) bias*. When something is persistently wrong or a failure, we tend to over-react and assume that the existing design and processes have failed and we need to adopt something new. We have deeply internalised that failures are due to lack of innovation with design, process, and technology. Very rarely do we step back to see whether the original design and processes themselves were rigorously implemented or not. It is very comforting to rationalise away failures by blaming it on the design and other extraneous factors, rather than questioning our implementation capability.

6. *Best-practice bias*. Occasionally, amidst the gloom surrounding the implementation canvas, we see bright-spots and embrace them as best-practice models to be transplanted across the world. Accordingly, the best-practice regulatory architecture is transplanted into a system which has neither the resources nor the prerequisite environmental conditions for the effective implementation of the best-practice model. Little do we try to examine whether the bright spot was due to the extraordinary personal initiative of a committed individual or group of individuals or due to some systemically built (and therefore replicable) capacity.

7. Finally, the *illusion of control bias*. No policymaker or political leader wants to face up to the reality that their primary implementation instrument, the bureaucracy, in its present condition, is just not capable enough to implement the proposed intervention, leave aside achieve the desired outcomes. Once this assumption is shaken, it can be a very unsettling process for bureaucrats and politicians to craft a policy intervention and its implementation plan. In fact, unlike earlier, when you only had to design a policy intervention (a best-practice model), now you

> have to also craft an implementation plan. Worse still, you need to tailor the policy intervention, conditional on your implementation capability. Apart from being personally unsettling, the challenge associated is, in any case, now far more complex than before.
>
> It is more likely that all of them bind in varying degrees nudging policymakers and political leaders to underestimate state capability problems."

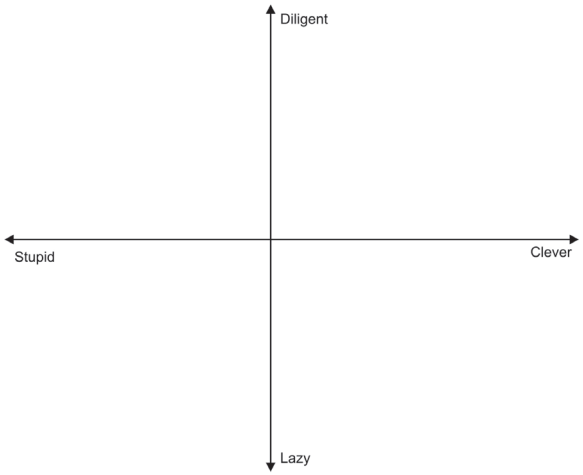
It is difficult to progress unless we recognise the implications of weak state capacity and work on strengthening it. We can display activity and seem to be acting through schemes or technology solutions or trying to scale up innovations, but that is not going to take us far as they are bound to hit a dead end. These aspects are required, but the fundamental problem is weak state capacity.

## Why can we organise elections on a large scale but not deliver education?

We discussed that weak state capacity is the critical constraint in public education but at the same time, our bureaucracy is also able to pull off miraculous feats, such as organising world's largest democratic elections, which seems like a paradox. We often make the mistake of equating the capability to conduct elections with the capability to deliver education. Hence, it is useful to understand this phenomenon in more detail, which we will henceforth term as the 'elections vs. education paradox'.

Kurt Von Hammerstein Equord, a famous German army general who served during World War I once remarked: "I divide my officers into four groups. There are clever, diligent, stupid, and lazy officers. Usually two characteristics are combined. Some are clever and diligent—their place is the General Staff. The next lot is stupid and lazy—they make up 90% of every army and are suited to routine duties. Anyone who is both clever and lazy is qualified for the highest leadership duties, because he possesses the intellectual clarity and the composure necessary for difficult decisions. One must beware of anyone who is stupid and diligent—he must not be entrusted with any responsibility because he will always cause only mischief."[60] His statement can be visualised in a two-dimensional framework as shown in Figure 3.2.

**Figure 3.2: Framework to categorise types of people**




Our policies can also be analysed using this framework. Policies that have been designed well are analogous to "clever" people; while those that have been designed poorly are like "stupid" people. Similarly, policies that have been implemented well are "diligent," while those that have not are "lazy." Like people, policies also come in combinations: good in design but bad in implementation (clever and lazy); good in design and good in implementation (clever and diligent); bad in design and bad in implementation (stupid and lazy); and the most dangerous—bad in design and good in implementation (stupid and diligent).

We thus observe that policy design and implementation together determine outcomes and both should be considered in our analysis of the election vs. education paradox. However, this framework does not help us understand the interaction between policy design and implementation.

A policy can be broadly divided into two components. The first component is the broader theme or idea of the policy which can be called as policy direction. The second component is the system of rules designed to implement that policy. For instance, conducting continuous and comprehensive assessments is a broader theme. Rules deciding the

monitoring procedures, responsibilities of different functionaries etc. help operationalise the broader theme into action, which can together be called as implementation design of the policy. These rules govern the functionaries who are responsible for implementing the policy, and hence can affect their functioning.

We can understand this further, by observing the daily functioning of frontline employees in education, Cluster Resource Centre Coordinators (CRCCs). CRCCs in education administration are expected to provide continuous academic support to teachers. Each CRCC is assigned some schools so that they regularly interact with teachers, understand their problems and give them appropriate support. The job requires CRCCs to adapt to the situations and responding accordingly. Researchers from Accountability Initiative tracked CRCCs to understand the nature of the tasks that they actually end up doing in practice. They find that, in practice, "CRCCs spend less than 10-20% of their time inside classrooms. For the rest of the time, they are busy checking registers to collect data required by their superiors. Even in their monthly meetings, they received orders only related to administrative duties".[61] In another set of interviews, they shared that they have a limited role in decision-making and their job is to only implement orders properly.

Performing tasks involving adapting to the situation requires autonomy and discretion on part of the frontline worker. We observe that people who are supposed to perform such tasks are being monitored by rigid rules, misaligned to the specific nature of the task and they are being made accountable as per these rules. But we also note that the norms governing CRCCs discussed above are not mandated by any particular public policy or scheme. This brings us to the next stage in disentangling the knot of the election vs. education paradox.

Rules influence implementation but these rules are of two types—those mandated by public policies and those inherent to the functioning of the lower level bureaucracy. The rules governing CRCCs discussed above correspond to the inherent norms of the lower level bureaucracy because no policy particularly specifies that CRCCs should be given only

administrative duties and should be monitored based on only those. Professor Akshay Mangla of Harvard Business School studied this phenomenon of inherent norms in a unique context of Himachal Pradesh and Uttarakhand both of which are hill states with similar socioeconomic characteristics, as shown in Table 3.1.

**Table 3.1: Himachal Pradesh and Uttarakhand—socioeconomic indicators**

| Characteristics | Himachal Pradesh | Uttarakhand |
|---|---|---|
| Population (million) | 6.9 | 10.1 |
| No. of administrative districts | 12 | 13 |
| Sex ratio (females per 1,000 males) | 974 | 963 |
| Annual per capita income (Rs) | 50,365 | 55,877 |
| % urban | 24.7 | 17.9 |
| % Scheduled Tribe | 4.0 | 3.0 |

*Source*: Census of India,[62] Reserve Bank of India.[63]

Both states have similar major education policies such as the mid-day meal scheme to provide free lunch and Sarva Shiksha Abhiyan (SSA), which provides for schools within a 1-3 kilometre range of habitats. The hierarchy in education administration is also similar. The administrators at the top level are from the Indian Administrative Service (IAS) and both states have Village Education Councils (VECs). Both states have achieved near-universal primary enrolment too.

Though they display similar characteristics, it is interesting to note that the learning outcomes in these two states vary significantly.

**Table 3.2: Learning outcomes—a comparison (%)**

| Metric | Himachal Pradesh | Uttarakhand |
|---|---|---|
| Class 5 students who can read a basic paragraph | 92 | 58 |
| Class 5 students who can do basic arithmetic | 88 | 69 |

Source: ASER 2011.

Professor Mangla conducted more than 500 interviews and focus group discussions with policymakers, bureaucrats, teachers and parents to understand the mechanisms behind the difference in learning outcomes in these two states despite their similar characteristics. He finds that "bureaucratic norms—unwritten rules that guide public officials—influence how well state agencies deliver services for the poor."[64] He illustrates many examples that depict this phenomenon.

For instance, a small nomadic tribe in Himachal Pradesh—the Gujjars—migrate to the hills in summer to feed their cattle and return to the plains in winter. This affects their children's education. Local officials noticed this and responded by creating a mobile primary school which would travel along with them, with teachers and learning materials. They were encouraged by their seniors to take special time out of their schedule to visit this school and help implement the programme. The officials also hired volunteers outside official recruitment channels. Contrast this with Uttarakhand, where a local NGO Uttarakhand Seva Nidhi (USN) helped the communities establish child care centres (baalwadis) which were funded by the Union government. After the state of Uttar Pradesh was divided, with the formation of Uttarakhand, officials started scrutinising baalwadis, forcing them to adhere to the rules pertaining to place, timing and schedule of operation of the centres. The baalwadis set up in assistance with USN were located near residential areas where people could access them easily, but officials wanted them to be located inside schools as per the rules. Over time, these had to be closed.

In the examples above, we see that in one state, local officials used their discretion, going out of their way to help people. In the other state, they used rules to stifle well-functioning programmes. This interplay of rules and autonomy shaped by unwritten bureaucratic norms, Professor Mangla argues, influences the quality of service delivery to poor in these two states.

We have now disentangled one more layer of the complex knot: Rules governing the employees, which are part of the inherent norms of the lower level bureaucracy, is another factor that influences the implementation.

The lesson from the above story is that the inherent norms of bureaucracy influence implementation. But, it does not necessarily tell us the nature of rules and the contexts in which they can be applied. For instance, if autonomy helps, should it be given in all contexts with respect to all tasks? If not, what are the deciding factors? Francis Fukuyama, noted political scientist, elaborates on this in his famous essay 'What is governance?'.[65] Fukuyama explains—if one has to procure an advanced strike fighter, one can just give a mandate to the bureaucrats to procure an advanced strike fighter and not put any additional constraints. This is a case of completely autonomous bureaucracy, where just goals are set (procure an advanced fighter) and bureaucracy is responsible for figuring ways to achieve that. The other way could be to mandate purchasing them only from specific companies and requiring them to follow strict procedures at each stage of the process. This is the case of a non-autonomous or a subordinate bureaucracy which is micromanaged with myriad rules and regulations.

Autonomy, as in the first case, gives scope for innovation and experimentation; at the same time, it can be misused. Subordination, as in the second case, can ensure accountability but can lead to inefficiencies. Thus, Fukuyama suggests that the relationship between autonomy and government quality[X] looks like an inverted U as shown in Figure 3.3.

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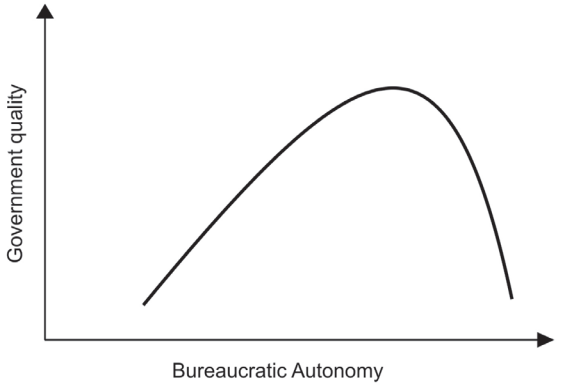
X Fukuyama defines governance as a government's ability to make and enforce rules, and to deliver services, which is equivalent to our definition of state capacity.

**Figure 3.3: Bureaucratic Autonomy and Quality of Government**




Source: Fukuyama, 2013[66].

At the left extreme, the bureaucracy has little autonomy and is bound by myriad of rigid rules and regulations, making it ineffective. At the other extreme, bureaucracy has high autonomy where it sets not just internal procedures but goals as well and can escape political control. In between these extremes, there is an optimal autonomy point. Fukuyama further argues that the position of optimal autonomy point is decided by the underlying capacity of bureaucrats, or bureaucratic capacity.

Bureaucratic capacity, which we will refer to as capacity from now on, is different from state capacity. It can be thought of in simple terms as: If given a task, how confident are we that the functionaries will implement it without resorting to corruption or evading work? If the bureaucracy is full of political appointees, then one would not want to give too much discretion to them as they may misuse it. Hence, the autonomy has to be reduced in such contexts and the optimal autonomy point would be towards the left in those contexts. In contexts with higher capacity (bureaucratic capacity), the optimal autonomy point would be towards the right, as we are confident that functionaries will not misuse autonomy and this autonomy may improve efficiency. In summary, Fukuyama argues that autonomy to employees should be reduced in contexts with low capacity to avoid misuse and autonomy should be increased in contexts with higher capacity to improve quality.

This raises another question. For a given capacity, is the optimal autonomy point (balance between autonomy and rules) the same for all tasks? As Fukuyama outlines, in India there are cases like the spectrum auction where more rules have to be formed to prevent misuse of discretion; there are also cases where local governments have to be given more autonomy for effective functioning. We may hence infer that optimal autonomy point depends not just on capacity, but also on the nature of the task.

Lant Pritchett, professor at Kennedy School of Government, Harvard University, categorises the nature tasks that governments perform in Table 3.3.

**Table 3.3: Five types of tasks that face organisations**

| Tasks of different types in each sector of government engagement | Basic education | Health | Legal | Financial sector | Postal |
|---|---|---|---|---|---|
| Concentrated (policymaking, elite) | Setting a curriculum | Tertiary hospitals | Appellate courts | Central bank policy | Policy of setting rates, services |
| Logistics | Building school buildings | Vaccination children | Notary services | Inter-bank payments | Delivering the post |
| Implementation-intensive service delivery | Classroom teachers | Ambulatory curative care | Licensing | Lending to SMEs | |
| Implementation-intensive imposition of obligations | Supervision of teachers | Regulation of drug retailing | Policing | Regulation of private banks | |
| Wicked hard | Raising performance | Promoting behavioural change (e.g., weight loss) | Dispute resolution | Financing entrepreneurship | |

Source: Pritchett, 2012.[67]

Concentrated tasks are those which require only a few people and can technically be performed by them in a closed room. Tasks of the logistics category are those where there is a clear established path to reach the goal, which can then be codified easily into rules. Tasks of the implementation-

intensive service category are those which require constant engagement with citizens and require their cooperation, where functionaries have to constantly iterate and adapt to the circumstances (iterative adaptation). Implementation-intensive obligations are those which require engagement with the public but by forcing them to do something, not necessarily through cooperation. Wicked hard problems are the hard set of abstract problems like improving performance.

For a given capacity, the optimal autonomy point in Figure 3.3 can now be decided based on the nature of the task as categorised in Table 3.3. Tasks belonging to logistical category are amenable to rules and can thus be strictly monitored by framing standardised procedures, reducing autonomy in other words, while it may not be desirable to do so in case of tasks belonging to the category of implementation intensive engagement, which require autonomy.

We can now note that most tasks involved in administering elections belong to the logistics category, where standard operational procedures can be established to guide and monitor functionaries. In education, however, the crucial aspect falls under implementation-intensive service delivery, which requires autonomy to execute. It is generally easier to monitor through rule based approaches because standard metrics can be defined and one has to just ensure that. On the other hand, aspects which require adaptation, like education, are relatively difficult to monitor because standard metrics cannot be used across contexts and one has to treat each case differently. The challenge becomes more pronounced in contexts of weak capacity because autonomy may be misused but at the same time not giving autonomy may lead to inefficiencies. All of this makes delivering education challenging when compared to administering elections.

Additional complexity arises when a functionary has to perform multiple tasks or tasks of multiple natures. When someone is burdened with tasks, they act to prevent the worse from happening rather than excelling at them. For instance, suppose that a CRCC has two tasks at hand, collecting data and giving support to teachers. Collecting and reporting data is a time-sensitive task, monitored through rules and if a CRCC does not collect data, it is easily identifiable. But, the efforts involved in coaching

teachers cannot be judged by rigid rules. It is also not as time-sensitive as reporting data and even if one does not coach teachers or does not coach properly, it is difficult to identify. When a person performing tasks of both these natures has to be monitored, monitoring authorities use performance on data collection exercise as the metric for performance because it is easily measurable. Functionaries also tend to prioritise data collection over coaching teachers because collecting data is time-sensitive and the ramifications for not coaching teachers are not clear.

When mission mode programmes are administered, certain specific tasks are prioritised by the top officials. It serves as a strong justification for functionaries to keep other works aside for some time and just focus on one aspect of their job. This re-adjustment of focus can yield results in the short term, but the other tasks cannot be put on hold for long. Hence, once the project is over or when there is a change in leadership, the functionaries are back in their multi-tasking mode, a state of comfortable yet undesirable equilibrium. In this, an average supervisor wishes to monitor based on the rule-based approach and sets expectations for CRCCs, and an average CRCC responds by prioritising such rule based tasks over important tasks like coaching teachers.

This suggests that consequences for non-performance, focus and time frame of the task also influence implementation apart from the nature of the task and capacity. In case of elections, non-performance can result in serious visible consequences; in education, however, not mentoring teachers has no visible consequence. In the case of elections, special focus is created by putting other tasks of functionaries on hold since it is only for a short period of time and hence manageable. In the case of education, it is a long-term process and functionaries have to multi-task because it is not possible to create that focus by putting other work on hold.

In summary, we are able to conduct elections because there is a clear goal; an established path to perform the tasks which can be easily codified into rules (nature of task—logistics); special focus is created by putting other works of functionaries on hold (focus); there are visible consequences for non-performance of duty; and the task is of a short duration. It is compared with education in Table 3.4.

**Table 3.4: Why we can organise elections but not deliver education?**

| Metric | Organising elections | Education delivery |
|---|---|---|
| Nature of task (frontline functionaries) | Enforcement. Does not involve engaging with public. Does not require frontline functionaries to adapt to contexts | Involves iterative adaptation—adapting to the context and needs engagement with public |
| Amenable to rules | Amenable to rules. Clear guidelines can be framed on 'what to do–how to go from X to Y' | Not completely amenable to rules. There is no 'one' path to go from X to Y |
| Interaction of norms of ecosystem and nature of task | Rule-based monitoring for tasks which are amenable to rules | General tendency towards rule-based monitoring for tasks which are not amenable to rules |
| Addressing weak capacity | Contexts of weak capacity can be handled by strict rule-based monitoring | Weak capacity cannot be totally addressed by rule-based monitoring, as many tasks are not amenable to rules |
| Focus | Each functionary generally performs tasks of only one nature, which are mostly amenable to rules. This creates focus | Functionaries may perform multiple tasks of diverse natures. Even in case where they perform tasks of only a particular nature, they are not amenable to rules.<br><br>In the absence of focus, people tend to prevent the worst from happening rather than excelling at all tasks; also tasks with rule-based monitoring get priority |
| Consequences for non-performance | Visible consequences of non-performance | No strong visible consequences of non-performance |
| Time frame of task | Short-term task. It is like running a 100-metre sprint. You can use all your energies for this short time | Long-term tasks and have to be done on a continuous basis. These are marathons. You can occasionally use energy bursts to boost performance but not on a permanent basis |

We thus observe that organising elections and education service delivery require capacities of a completely different nature. The ability to do one of these does not necessarily mean that we can do the other. We should not be misled by our capacity to administer elections and over estimate our capacity to deliver education. Many successes of Indian bureaucracy are regarding tasks that come under the 'logistics' category. At this point, may be it is useful to ask, are there any examples of Indian bureaucracy's success regarding tasks that come under implementation intensive service which requires high performing autonomous systems to do the task effectively? In general, some of the major failures in implementation are regarding the tasks which have the following characteristics on the above metrics:

**Table 3.5: Characteristics of tasks that are easily prone to implementation failures**

| Feature | Task and ecosystem |
|---|---|
| Nature of task (frontline functionaries) | Involves iterative adaption |
| Amenable to rules | Not amenable to rules |
| Interaction of norms of ecosystem and nature of task | Involves customising norms to tasks of different nature |
| Capacity | Weak capacity |
| Focus | Involves tasks of diverse natures or overloaded |
| Consequences for non-performance | No major consequences for non-performance |
| Time frame of task | Long-term tasks which have to be done on a daily basis |

## Understanding components of state capacity–what determines implementation of public policy

Let us try to put together the lessons learnt in the process of solving the elections vs. education paradox, and prepare a framework to understand state capacity and its components.

The first component of state capacity is the nature of functionaries– if given a task, how confident are we that the functionaries will implement it without resorting to corruption or evading work? We called this as bureaucratic capacity earlier. There are two aspects to it: i) the inherent nature of functionaries and; ii) the part of their nature that is shaped by the environment they work in. A person may start out being completely honest but over time, the constraints of the system may turn that person dishonest. The proportion of these two aspects, inherent nature and part of the nature that is affected by the system, decide the extent of bureaucratic capacity.

Fukuyama argues that bringing professionalism into public service, especially through appointment of educated professionals, can increase bureaucratic capacity.[68] But it alone does not explain the manifestations of weak capacity observed in the case of teachers and doctors who are educated. The part of a person's nature that is shaped by the system may be the reason for non-performance in such cases.

The second component of state capacity is the skill of functionaries to perform the tasks they are given. Functionaries may not be performing some tasks despite having the skill to do it or they may be not performing because they do not have adequate skills to perform. An average doctor in a public hospital may belong to the former category, while the issue with teachers is a mixture of both.[XI]

These first and second components form part of the characteristics of an individual as depicted in Figure 3.4.

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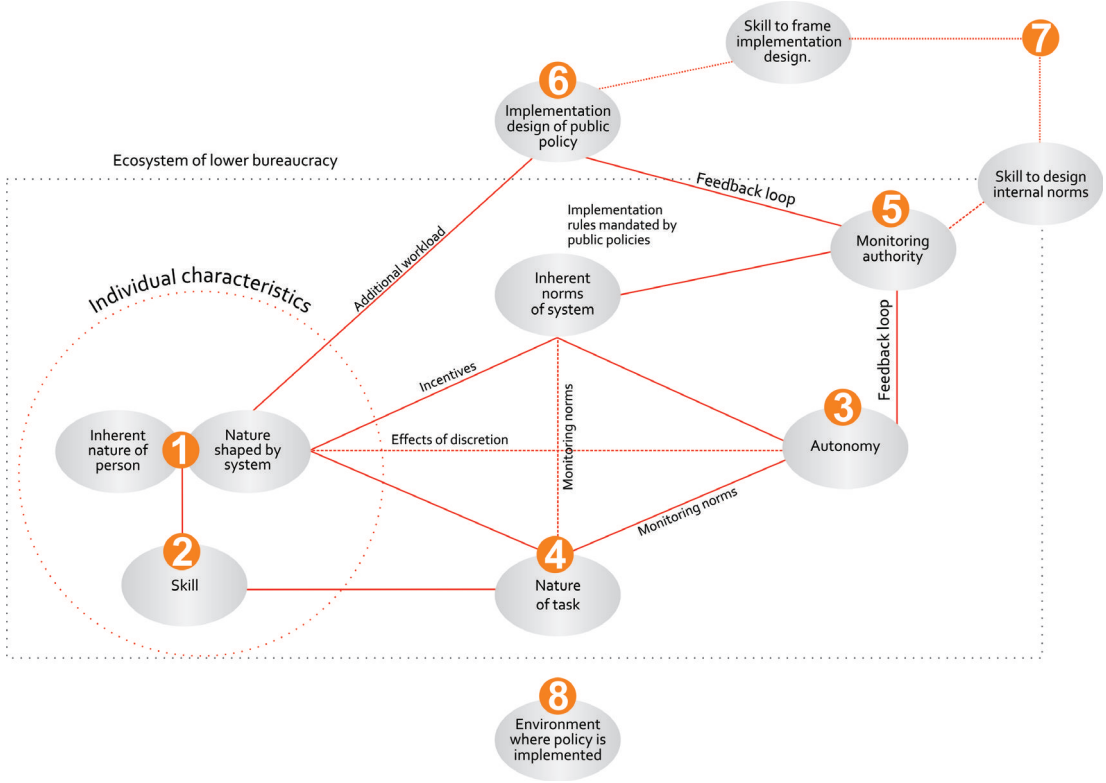
XI In an experiment standardised fake patients were sent to rural primary care providers in Madhya Pradesh, to record the quality of care. It finds that the same doctor provides much better care on the same medical case in his private clinic than in his public clinic. (Das, Jishnu, Alaka Holla, Aakash Mohpal, Karthik Muralidharan. 2015. Quality and accountability in healthcare delivery: Audit-study evidence from primary care in India. NBER working paper 21405.)

## Figure 3.4: Components of state capacity



The third component is the autonomy of a functionary to take decisions and be an active part of the feedback loop. We earlier discussed that frontline functionaries need autonomy to implement tasks, which need adapting to contexts. Lack of this autonomy and implementation through centrally stipulated rules can lead to inefficiencies and rough edges. For instance, in the case of the Gujjar community in Himachal Pradesh, discussed earlier, the nomadic nature of people needed special action from functionaries. Without autonomy it is not possible to devise customised solutions to such contexts.

The frontline functionaries need not always be the decision-making authority to adapt to contexts. They can also function as the ears on the ground, sending active feedback on the functioning of policies. Such feedback helps in broadly two ways:

i. It helps improve the policy, customising it to conditions. For instance, Glewwe and Muralidharan summarise four different observed effects of providing learning resources to schools:[69] "Four different studies found that distributing textbooks and resources to schools had no impact on learning–but for four completely different reasons (and so with different implications about what might work and hence what should be done differently next time). In one case the books were just locked up in a storage cupboard and never made it to the kids, in one the textbooks were just too hard, so that only the few brightest kids could even read them, in another case they were effective the first year, but the second year parents stopped spending their own money on books, so the overall impact dropped back to zero in the second year, and in another there was only a positive impact where teachers were also being paid based on their performance."[70]

An active functionary would report these realities of the field and the local authority would devise ways to address the varied contexts.

ii. Autonomy helps identify additional aspects required to attain policy goals. At times, the reason for not achieving results need not always lie with the particular policy that was aiming to address it; it can also be that other

complementary inputs required to be able to achieve the goal are missing. The evolution of Bangladesh Rehabilitation Assistance Committee, a Bangladesh NGO, as narrated by The Economist, illustrates this:

> "BRAC is a sort of *chaebol* (South Korean conglomerate) for social development. It began with microcredit, but found its poor clients could not sell the milk and eggs produced by the animals they had bought. So BRAC got into food processing. When it found the most destitute were too poor for micro-loans, it set up a programme which gave them animals. Now it runs dairies, a packaging business, a hybrid-seed producer, textile plants and its own shops—as well as schools for dropouts, clinics and sanitation plants."[71]

Even if someone starts with a microcredit programme with the aim of eradicating poverty, it is essential to recognise other necessities like food processing (in this context), to be able to realise the policy goal of eradicating poverty. An active functionary would provide feedback on necessity of such complementary inputs.

We must also note that frontline functionaries would only provide such feedback if they believe that they are part of the decision-making process and trust that their feedback is going to be heard and acted upon. If not, they can "perceive themselves as cogs in the administrative machine, which inevitably leads them to internalise and interpret the challenges they face in their jobs as something that remains outside of their control. This legitimises a culture of apathy and lack of responsiveness toward understanding and directly addressing the learning deficit."[72]

The fourth component is the nature of the task. We discussed the typology of the different nature of tasks and how implementation of each of these tasks requires different approaches, skills and hence involves different challenges.

The fifth component includes the norms and ways of functioning inherent to the organisation, especially the monitoring rules. The norms and ways of functioning of the organisation affect the functionaries in

two ways: One, they set expectations for the functionaries, as to what will be valued by the organisation. When there is misalignment between the inherent norms of the organisation, which sets the expectations and the nature of tasks that the functionaries have to perform, we see ineffective implementation. If CRCCs are judged based only on their performance on administrative duties, they would prioritise that over coaching teachers. Similarly, if teachers are judged based only on completion of syllabus, an average teacher would tend to emphasise on that over ensuring learning. Two, inherent norms create incentive and performance pressures to boost and sustain performance of functionaries.

These five components—the nature of functionaries, skill to perform tasks, autonomy, nature of tasks, and inherent monitoring norms—form the ecosystem at the lower level.

The sixth component is the implementation design of public policies. Implementation design of a policy interacts with the ecosystem at the lower level through its demands or duties prescribed by policy. The interaction of these demands with the inherent norms of the lower level bureaucracy can affect the implementation in two ways:

i. *Interaction between implementation design of a policy and functioning (inherent norms) of lower level bureaucracy:* Consider a lower level bureaucracy where the inherent norms provide space for innovation and the monitoring procedures are not strictly rule-based. If a new public policy is designed, the implementation design of which requires the lower bureaucracy to strictly follow a rule-based approach, it interferes with the inherent unwritten norms of the lower level bureaucracy, disturbing its equilibrium, negatively in this case. Similarly, if the design of a public policy gives complete autonomy to the lower level bureaucracy, which is accustomed to rule-based mechanisms, it too will lead to inefficient implementation.

ii. *Interaction between public policy decisions and functions of lower level bureaucracy:* A new policy affects the functions of lower bureaucracy in two ways. One, new policy decisions increase workload. Often there is only one contact point on the field for a department, say, a CRCC in the case of education.

Any new policy which requires CRCCs to perform a new task is an addition to the existing workload. Over time, this workload can also become unmanageable. It is interesting to note that private organisations hire new teams whenever there is a new project in place, but in bureaucracies, the workload of new schemes is often piled upon lower level functionaries. Two, new policy decisions can disrupt priority of tasks of functionaries at lower level. Mission mode programmes or top down decisions require functionaries to focus on specific aspects, keeping others on hold for some time, thus disrupting the priorities at the local level.

This brings us to the seventh component of state capacity, the capacity to design norms and implementation design. Implications of implementation design's interaction with lower level bureaucracy, discussed in the sixth component, illustrate the challenges in policy design. A well-designed policy need not just be technically sound, it should also account for the existing norms of the organisation, factoring in the effects of implementation design's interaction with the existing framework at the lower level.

While we can iterate on policies to fine tune them, the way technological products are built by developing several prototypes, we must note that iteration of policies sometimes have significant costs associated with it, as each change in a policy has the potential to affect a large population. Hence, we must carefully anticipate and account for all possible aspects while framing rules and regulations of the implementation design. This requires specialists with strong domain knowledge and understanding of the nuances of policy design and implementation. For instance, consider the example of CCE. CCE may be desirable in theory but if the implementation process is made too cumbersome for an average teacher to carry out activities in class, it defeats the whole purpose. Similarly, functionaries at mid-level or higher level should also have the skill to design and adapt norms of functioning as per context.

Requirement of skills to design implementation policy and norms of organisation can be thought of as bureaucratic capacity at higher levels. Just as professionalisation of lower level bureaucracy helps,

professionalisation of bureaucracy at higher and mid-levels by equipping them with appropriate skills to design norms and implementation design, can also enhance effectiveness of implementation of policies.

The seven components—nature of functionaries, skill, autonomy, nature of work, inherent norms, implementation design, capacity to design norms, are related to the internal dynamics of the bureaucracy that shape its capacity.

The eighth component is the environment external to the bureaucracy in which policies are being implemented. It is possible that the same result of the interaction of the first sseven components may yield different outcomes in different contexts. As Joel Midgal argues, the strength of organisation of society resisting state penetration can be a reason for different outcomes of a state, with the same capacity yielding different outcomes across contexts.[73] Consider two police departments with the same capacity as defined by the interaction of the above seven components. One is assigned a policing policy (say, mandating helmets) in a society which has little regard for rules, and the other is told to implement the same policing policy in a different context where people usually obey laws. The outcomes may differ, though they have the same capacity as defined by the seven components. In such cases, organisations may have to adjust the seven components to suit the new contexts, which is also a defining feature of high-capacity organisations.

We must also note that the environment in which policy is being implemented interacts with the other components. For instance, the demands from community or norms of community monitoring also interact with combination of inherent monitoring norms and nature of work, as discussed earlier. Thus, the nature of task performed by functionaries, monitoring norms of the bureaucracy and the norms of community based monitoring together act on the functionaries and they have to be aligned for effective implementation.

Phenomenon similar to resistance to state penetration is also in play while enforcing monitoring norms. If the bureaucracy is organised and exercise

political clout, then it might be difficult for the monitoring authority to enforce monitoring and accountability norms. This represents the political economy phenomenon regarding teachers in education.

These eight components together decide the effectiveness of implementation of a policy. State capacity is sometimes phrased in terms of choice and accountability or a problem of scale. One may observe from the above framework that state capacity has several other components and the outcome is an interaction of all these. Phrasing state capacity in terms of only choice and accountability does not consider many of the above aspects.

One may also note that the above framework of understanding state capacity does not consider it a static quantity, even when we restrict the definition to specific contexts. As per this framework, state capacity is a dynamic quantity, continuously changing not just with change in new rules (inherent norms) of organisation, but also with every new public policy or its iteration and its interaction with the inherent norms of the bureaucracy.

This framework can also be used to understand the limitations of using outcomes as a measure of state capacity. It is argued that outcomes, learning outcomes in case of education can be used as a proxy to measure state capacity. While it may be true that countries achieving higher outcomes may have higher state capacity, the converse need not be true. Outcomes are a result of policy directions (broad theme) and state capacity. As noted earlier, the policy direction vs. implementation framework gives us four possibilities, good policy direction but bad implementation, good policy direction and good implementation, bad policy direction and bad implementation, bad policy direction and good implementation. A country might have stronger state capacity but still not achieve outcomes because of the inappropriate policy directions.

## Additional implications of state capacity - II

We earlier discussed some additional implications of weak state capacity. We can add more to the list from the perspective of its implications for policy design, from the discussion so far on frameworks to understand state capacity. Strength of state capacity influences the policy design process in following ways:

1. *What to decentralise*: In each sector, there are certain aspects that have to be devolved and certain aspects that are to be preferably centralised. Making this distinction is crucial for design of policy. In a context with strong capacity, we can decentralise decisions without worrying about consequences, while in contexts of weak capacity, we need to evaluate each instance carefully which adds an additional layer of complexity to the policy design.

2. *Transition from low capacity to high capacity*: As with many other real-life problems, though the final goal is clear, transition from the existing state to the desired state can be challenging. This example can illustrate it better:

> In any organisation, we would desire to have teams capable of making certain decisions themselves and acting swiftly. This is the desired state. But if the current state of the organisation is that employees are insincere, irregular in attending office, starting the reformation procedure by giving autonomy to the employees may affect the company in the short term. In such contexts, it might make sense to initially monitor employees through strict rules to ensure minimum prerequisites at least. Strict rules ensuring attendance and work hours, regular filing of work reports and tracking their activity may at least make employees do the minimum necessary, and attend office. While this may not necessarily result in outcomes, when this is strictly implemented and employees are forced to follow it for some time, it can induce seriousness towards adherence to rules and heighten the stigma of breaking rules. In the case of organisations, which are performing well but have to be taken to a state of excellence,

> carrying out reform process through rigid rules may lead to negative consequences. Such rules may constrain the motivated employees, suffocate them, and may even make them leave.
>
> Thus, the approach has to be different for bringing a system from a poor to a good state and for bringing it from a good to an excellent state.

The challenge here is that a system in poor state does not mean that everyone in that system is poorly performing. There may be a spectrum of people within a system at any given point of time. When a strong rule based accountability or policies nurturing intrinsic motivation are carried out, each of them may react differently. For instance, after introducing accountability based high-stakes testing in Texas, USA it was found that, such policy improved the performance of schools that were at the risk of failure but other schools tried to game the system by dropping low performing students from taking the test.[74]

While designing a policy, one may have to factor in these aspects and take a decision depending on the spread of people across the performance spectrum. Rule based accountability may help in system with non-performers as majority and nurturing intrinsic motivation can help systems with lower percentage of non-performers. One should also remember to adapt these policies as the system transitions from one state to the other, for instance, from poor to good.

3. *State capacity as a factor in making policy choices*: The World Bank's report 'Skills and jobs—Lessons learned and options for collaboration' summarises the experience of skill training programmes from across the world.[75] Not surprisingly, the skilling programmes differ widely in design from country to country.

Germany uses the apprenticeship model where companies (or individuals) get subsidies for training apprentices. The structure of the programme, quality, content and other aspects are regulated by a central agency. There are also voucher models where workers are eligible for vouchers for a

certain amount, and they use the voucher to equip themselves with the skills they like. The capacity to issue certifications and monitoring are requirements to implement this model.

Which one should the government opt for? The World Bank report observes about the German model: "The strongest constraint in the transferability of such programmes is that they require a strong institutional framework, in particular a clear legal framework." The voucher model requires another set of conditions. In such situations, the capacity to enforce policies should also be considered as a factor while making policy choices, apart from the usual metrics of context, cost effectiveness, and political economy. One must note that all regulations are not equally enforceable by everyone. The capacity to enforce depends on the strengths of the government, context, time, and other factors. A government which thinks that it has better capability to monitor compared to resolving legal issues can go for the voucher model, and vice versa.

In the context of education, it is also often argued—how can a government which cannot run public schools monitor private schools? The appropriate question to ask is, which policy does the government think that it can enforce better? It must be cautioned that capacity alone should not be the deciding factor. Sometimes, necessity also matters. For example, if the capacity to execute was to be used as a filter, then the Aadhar policy would not have seen the light of day. In such scenarios, if it is decided that it is necessary to implement the policy, putting in extra efforts to ensure its proper execution is the only way out.

4. *Weak state capacity reduces policy options*: Governments have to often design and enforce policies in diverse contexts, which might require a mixture of approaches. Lack of state capacity to ensure prerequisites rules out some policy options for governments and limits their ability to incorporate good ideas from other contexts. For instance, in the apprenticeship example of Germany discussed above, if the capacity of a nation to enforce legal contracts and other aspects is weak, it

automatically rules out the possibility of this model and reduces the number of available policy options.

Similarly, weak state capacity also deprives us of the fruits of agnostic policy directions. We earlier discussed combinations of policy direction and implementation in a two dimensional framework, good and bad. Apart from good and bad policy directions, there are also agnostic policy directions, those policy directions which may be theoretically neither good nor bad as ideas but the results of such policies (good or bad) depend majorly on their implementation. For instance, consider the requirements of degrees or certifications for professionals. Mandating certifications for professions like plumbing, hairdressing etc., the way it is done in countries like Germany, may ensure high quality of skilled workers in the market but only when there is capacity to ensure quality training. On the other hand, if one does not have capacity to ensure quality training, if a non-trained person is as good as a trained person, such requirements may lead to license raj and create distortions in the economy leading to efficiencies. In such cases, one may not mandate such requirements but it is at the cost of not having high skilled professionals. Similarly, in education too, mandating certifications for teachers may result in higher quality if one has the capacity to train, at scale, and ensure the adherence to certification. On the other hand, if one does not have capability neither to train nor to enforce the rule, it may lead to license raj or distortions. But, if we loosen such certifications owing to weak state capacity, we are losing on having a talent pool of high skilled teachers. Thus, if the state capacity is weak, it might remove such agnostic policy directions from the pool of options and one may miss out all their benefits.

In games like field hockey and football, it may sometimes happen that the ball passed from the player of a team does not reach his team mate precisely. It may land up at a place in between where there is equal probability for players from both sides to pick up the ball. Such situations are called 50-50 passes. It said that taking control of ball during such 50-50 passes can decide the game. In the same manner, converting such 50-50 options like agnostic policies into our favour can go long way in deciding the outcomes.

In other words, choice to governments is as important as choice to an individual. Lack of choices resulting from weak capacity is detrimental to already ailing systems.

All these suggest that the effects of weak state capacity are not merely manifested in forms of constraints in implementing of policies; it also has other important implications for policy design adding to its complexity and reducing choice for government.

# 4

# THROUGH A DIFFERENT LENS

## Critical thinking – Personalising education to local context – Adapting innovative models

Suki Kim, an English teacher from South Korea, taught 19-year-olds in North Korea for six months and wrote a memoir about her experience. She narrates: "I emphasised the importance of essays since, as scientists, they would one day have to write papers to prove their theories. But in reality, nothing was ever proven in their world, since everything was at the whim of the Great Leader. Their writing skills were as stunted as their research skills. Writing inevitably consisted of an endless repetition of his achievements, none of which was ever verified, since they lacked the concept of backing up a claim with evidence. A quick look at the articles in the daily paper revealed the exact same tone from start to finish, with neither progression nor pacing. There was no beginning and no end."[76] This narrative depicts the sad state of education in North Korea.

The situation is not that great in some other countries too. A Pakistani friend of mine shared a similar story. During a visit to a school in his village, he happened to check the exam papers of students. All students were supposed to write an essay on the topic 'My best friend'. He was surprised

to find that all students had written exactly the same essay, explaining the same good qualities of their friends, even though each one of them must have had different friends. Memorising essays on standard topics to be reproduced in exam is a common practice in India too. These examples demonstrate that education cannot simply be about being able to read, write and doing operations on numbers. It is not acceptable if students can read and write but cannot think critically and creatively. Nurturing these skills has to be part of education. Creativity expert Ken Robinson explains in his series of TED talks that such human resources are like natural resources, buried deep; and one has to create circumstances for them to show themselves. He passionately advocates moving away from an approach that clones successful systems to one which customises them, and personalises education to local contexts.[77]

Interestingly, these ideas are not new to India. We officially recognised the necessity of critical thinking and inquiry years back. The Constitution lays down promoting scientific temper as one of our fundamental duties: "Develop the scientific temper, humanism and the spirit of inquiry and reform" (Article 51A (h)). The National Curriculum Framework (NCF), 2005, notes that "for any qualitative change from the present situation, science education in India must undergo a paradigm shift. Rote learning should be discouraged. Inquiry skills should be supported and strengthened by language, design and quantitative skills."

The question however is: How do we ensure that our students do not end up being in the state that Suki Kim describes? How do we foster creativity and create personalised local systems? How do we use the principles of National Curriculum Framework against rote learning and translate them into reality?

These issues are traditionally discussed in terms of demand and supply gaps. On the demand side, it is argued that parents care more about marks; they do not recognise the value of such skills and may have apprehensions about new models of schooling. On the supply side, it is argued that governments and schools do not actively promote

creative thinking and inquiry, as our curriculum is not designed on these tenets. Bracketing issues into these two categories does not shed light on the challenges involved in translating the vision of fostering creativity and inquiry into action.

To explore this further, it is first important to understand what it means to teach concepts using the above principles. Let us consider the following two examples from NCF 2005 in the context of the two principles—personalising teaching to the local context, and promoting inquiry.

*Personalising teaching to local context:*

> **"***What biology do students know?*
>
> 'These students do not understand science. They come from a deprived background.' We frequently hear such opinions expressed about children from rural or tribal backgrounds. Yet consider what these children know from everyday experience.
>
> Janabai lives in a small hamlet in the Sahyadri hills. She helps her parents in their seasonal work of rice and tuar farming. She sometimes accompanies her brother in taking the goats to graze in the bush. She has helped in bringing up her younger sister. Nowadays she walks eight kilometres every day to attend the nearest secondary school.
>
> Janabai maintains intimate links with her natural environment. She has used different plants as sources of food, medicine, fuelwood, dyes and building materials; she has observed parts of different plants used for household purposes, in religious rituals and in celebrating festivals. She recognises minute differences between trees, and notices seasonal changes based on shape, size, distribution of leaves and flowers, smells and textures. She can identify about a hundred different types of plants around her—many times more than her biology teacher can—the same teacher who believes Janabai is a poor student.

> Can we help Janabai translate her rich understanding into formal concepts of biology? Can we convince her that school biology is not about some abstract world coded in long texts and difficult language? Rather it is about the farm she works on, the animals she knows and takes care of, the woods that she walks through every day. Only then will she truly learn science."[78]

This example shows that science need not be about teaching facts from textbooks. It can be experiential and relevant. A teacher should be able to use objects that students see and experience in their daily lives and connect them to the abstract concepts that need to be taught. This would truly personalise the context and make it useful for children, helping them learn.

*Instilling inquiry:*

> "Air is everywhere" is a statement that every schoolchild learns. Students may know that the earth's atmosphere consists of several gases, or that there is no air on the moon. We might be happy that they know some science. But consider this exchange in a Class IV classroom.
>
> **Teacher:** Is there air in this glass? Students (in chorus): Yes! The teacher was not satisfied with the usual general statement, "Air is everywhere." She asked the students to apply the idea in a simple situation, and found, unexpectedly, that they had formed some "alternative conceptions".
>
> **Teacher**: Now I turn the glass upside down. Is there still air in it? Some students said "yes", others said "no", still others were undecided.
>
> **Student 1**: The air came out of the glass!
>
> **Student 2**: There was no air in the glass.
>
> In Class 2, the teacher put an empty glass over a burning candle and the candle went out! The students had performed an activity

> whose memory had remained vivid even two years later, but some of them at least had taken away an incorrect conclusion from it.
>
> After some explanation, the teacher questioned the students further. Is there air in this closed cupboard? Is there air in the soil? In water? Inside our body? Inside our bones? Each of these questions brought up new ideas and presented an opportunity to clear some misunderstandings. This lesson was also a message to the class: Do not accept statements uncritically. Ask questions. You may not find all the answers but you will learn more." [79]

This example shows that students are not a blank slate that a teacher writes upon. They might have some preconceived notions about certain phenomena due to their lived experiences. In order to teach them, it is important to have a sense of understanding of their world, their context, diagnose their problems and address the issues accordingly.

The vision of a classroom filled with creativity and inquiring minds requires the teacher to understand concepts in depth, to allow students to ask questions, to diagnose students' mistakes and to address their queries. It thus involves exercising judgement to adapt to varying contexts. Hence, it is not possible to standardise this process into rules and make teachers accountable using a checklist. Incorporating such approaches also makes it difficult to monitor teachers: How do we monitor a teacher that just teaches definitions and reads text loud from textbook without going through an effortful approach as shared above? The complexity of these processes illustrates the need for training, strong support structures, and small class sizes.

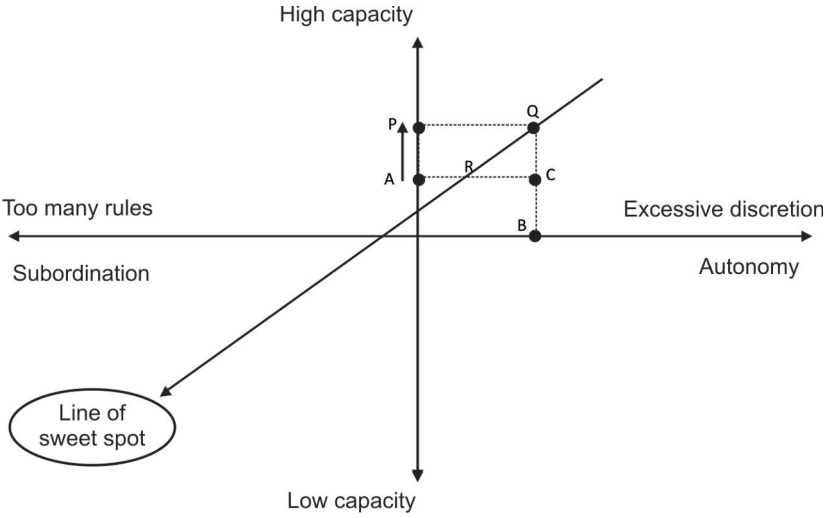
Let us analyse this context from the perspective of implementation challenges using metrics developed earlier (Table 3.5). Details of our context as per these metrics are listed in Table 4.1.

**Table 4.1: Characteristics of tasks easily prone to implementation failures – applied to task of instilling inquiry and critical thinking skills**

| Feature | Imbibing inquiry, personalised education |
|---|---|
| Nature of task | Requires engagement with students |
| Amenable to rules | Not amenable to rules as context of students and questions can differ |
| Interaction between norms of ecosystem and nature of task | Time-intensive process but monitoring metrics are based on syllabus completion (misaligned with nature of task) |
| Capacity | Weak capacity |
| Consequences for non-performance | No major consequences for not following an engaging process of teaching, as there are various possible methods and it is hard to identify and monitor |
| Time frame of task | Long-term task – has to be done on a daily basis and is not a short burst of activity |

Details of Table 4.1 illustrate perfect combination of characteristics that makes it easily prone to implementation failures. The nature of teaching is such that it demands high levels of autonomy and discretion for the frontline workers, but if such autonomy is given in the context of weak capacity, it can be misused. At the same time, we cannot reduce the autonomy because it is not possible to do such tasks without autonomy. What can be done then? How can we ensure implementation? Let us understand this further using Figure 4.1.

**Figure 4.1: Demonstration of ways to improve outcomes by adjusting autonomy and capacity[XII]**




The amount of autonomy to be given depends on the capacity; more the capacity, more the autonomy that can be given. The balance of autonomy and capacity, the line of sweet spot, is shown in Figure 4.1. Any given point, representing a system can be brought back to the line of sweet spot by adjusting capacity or (and) autonomy. For instance, point C can be brought on to the line either by decreasing the autonomy, in which case it ends up at R. Alternatively, point C can also be moved upwards, by increasing capacity, in which case it ends up at Q. Usually, increasing capacity is difficult compared to decreasing autonomy and hence, in cases where there is excess discretion compared to the capacity, it is recommended that autonomy be decreased.

Decreasing autonomy is the usual approach taken, but the challenge is that adjusting autonomy is not easy for all tasks. In contexts like education, as witnessed in the discussion of two examples earlier, one needs some minimum autonomy to perform the tasks itself. For instance, if the

XII Image credits: Fukuyama (2013).

minimum autonomy required is B and the capacity of the system is at the level as denoted by A, one cannot bring the system on to the line of sweet spot by reducing autonomy of system at point C. The only way possible is to increase the capacity from A to P, thus reaching sweet spot Q. Thus there is no alternative to strengthening state capacity in cases where tasks require minimum autonomy. Similarly, the problem of weak state capacity can be addressed to an extent in early grades by reducing syllabus or standardising procedures. The same cannot be done for higher grades especially for imbibing skills of inquiry, critical thinking which require high performance systems with autonomy. There is no other way than to increase capacity if we aim to reach the quality as defined by higher standards of critical thinking etc.

In early 2015, Finland scrapped subjects from its curriculum and introduced phenomenon-based learning or topic-based learning.[80] For instance, instead of studying history, geography and economics of Europe separately, students would study the topic of European Union, which would have all the elements of history, geography, economics and others. This is expected to promote interdisciplinary learning and enhancing application of knowledge to real world, which is crucial in today's globalised environment. This may be a great idea and maybe it should be considered, but one must remember that strong state capacity is a prerequisite for incorporating any such innovative pedagogical model into the regular system.

Some also ask with in despair, if we have not been able to teach our children how to read and write, how will we perform the complex job of fostering creativity and imbibing them with inquiry skills. Weak state capacity is the root cause of this sense of despair, and such despair shrinks our imagination of the possibilities of what we can achieve. We may not have immediate solutions or actionable points to strengthen capacity in the short term, but it is important to appreciate the challenges of fostering creativity and, imbibing inquiry skills, and integrating innovative models from the perspective of state capacity.

## Teacher training

"Outside ears, and eyes, are important for concert-calibre musicians and Olympic-level athletes. What about regular professionals?" [81] writes Atul Gawande, an author and a famous public health specialist. This is a question worth pondering upon. The Indian cricket team has a coach; one of the world's top badminton players, Saina Nehwal, has a personal coach, and almost every professional player will have a personal coach. These players already know the game. So what does a coach do?

Coaches have a unique function. For a person unfamiliar with a game, say, hockey, it is just a group of people running after the ball. Regular followers of the game may identify gaps while playing, but a coach does much more than that. Coaches observe minute details and make sense out of them—the weaknesses and the strengths. They can spot shortcomings in coordination, analyse the strategies of opponents and advise the players. Thus, even if players know how to play a game, they need an external person to help them strategize, identify their shortcomings and advise accordingly so that they can perform better. The nature of a teacher's job is as complex as playing a competitive sport. Teacher in a classroom is like a player in a field trying to navigate through challenging circumstances under pressure. Why not, then, have coaches for teachers?

In our journey across the education landscape, we at times marked areas where teachers might need support. The first such area is pedagogy, assisting teachers with approaches to teach concepts and updating teachers with the latest trends in research and pedagogy. They might also need support on dealing with unique classroom situations like multi grade classrooms. As sports coaches do, teachers might also need someone to observe them while teaching in class and suggest improvements.

The second area is helping teachers understand how children think and process knowledge. Using an example of the decimals concept, we discussed that there can be multiple reasons behind the incorrect answer of a child. We also discussed the example of a lesson about air, where students had preconceived notions, which were leading to the child

forming incorrect conceptions. Teachers need to be trained in order to diagnose such mistakes and appropriately correct them.

The third aspect is assisting teachers to address emotional needs of children. Teachers in a typical classroom do not merely serve an academic purpose. They have to also provide emotional support to children as and when needed. For instance, a child whose parents unfortunately lost their livelihood for some reason may struggle to concentrate the way other students in the class can. Many other such non-academic issues can come up in a real classroom scenario. Teachers may need a place to reach out to, to seek advice on addressing such needs.

Teaching is a challenging task, especially when one is doing it alone in a remote school, against many odds. It may not be possible to sustain motivation all through and teachers may go through occasional motivation issues. If such cases arise in private organisations, there is a reporting manager or an HR representative to talk to. Teachers may also need someone to talk them through their problems, hearing them out and responding accordingly, to reignite the passion for teaching and sustain it.

Apart from addressing the demands of teachers through training, some external interventions may have to be made in order to steer teachers towards a particular goal. For instance, some teachers may have prejudices such as students of a certain gender, caste or income group are inherently less capable of learning. This may affect their approach towards teaching and their efforts. Appropriate training can help dislodge such views. There may also be other requirements for training apart from those listed above, but these give us a general sense of what needs to be done.

The necessity for teacher training was recognised long ago in India and several initiatives in this direction were taken. State Institutes of Education (SIEs) were set up in many states as per the recommendations of the Education Commission (1964-66). The Chattopadhyay Commission recommended mandatory three-week training for teachers once in five years, which was later withdrawn due to pressure from teachers and the lack of capacity to train all teachers.[82]

A District Institute of Education and Training (DIET) was set up in each district as per the recommendations of National Education Policy, 1986, with the mandate to provide in-service training to teachers. Block Resource Centres (BRCs) and Cluster Resource Centres (CRCs) were set up under the District Primary Education Programme (DPEP) of Sarva Shiksha Abhiyan (SSA) to provide in-service support to teachers.

The government has been running teacher training programmes for the past few decades. What are the issues with these trainings then? Justice J S Verma's report on teacher education documents some important concerns expressed regarding current teacher training programmes:

1. "While in-service programmes have been conducted under the DPEP, SSA and the teacher education scheme, a holistic framework on in-service teacher education–its nature, content, duration, periodicity, modality, institutional responsibility, incentives for participation, etc.—has not been developed.

2. Institutions where the training is conducted–DIETs, BRCs, etc.—are not adequately equipped in several states in terms of physical infrastructure (lecture halls, seating arrangements, hostel facilities, etc.) and resources (reading rooms/library, learning kits, audio-visual material, etc.).

3. Selection of resource persons for conducting the training programme is crucial for its success. However, there are no uniform frameworks, and procedures regarding qualifications, selection process, personnel policy vary widely across states.

4. Even while training has been made compulsory for every teacher (at elementary stage), there exists lack of clarity on the basis of teacher selection for a particular programme. As a result, very often a teacher undergoes training in areas which are either not relevant or divorced from his needs; resultantly the needs of the teacher remain unaddressed.

5. Problems exist in the preparation of curriculum/modules, which have a top-down approach, in contrast to a needs-based approach.

6. The short duration of the training has also led to its low effectiveness. The split design model—10-day training at the BRC, followed by one-day training for 10 months at the CRC—can have limited effect on the development of professional skills of teachers. Long-term training courses in a distance-cum-contact mode have not been conceptualised for in-service teachers.

7. Despite unprecedented advancements in technology, the modality of teachers' in-service education has, by and large, remained conventional, involving one-way transmission of information from the trainers to the trainees, in a cascade model. The limitations of face-to-face training in a cascade model can be addressed to an extent with the use of technology like teleconferencing, using audio and video programmes and using web-based teaching-learning during personal contact programmes."[83]

Teachers in focussed group discussions as part of another study also shared that they often need training and support on handling multi-grade classrooms but the training programmes do not cater to their needs and also that methodologies discussed in trainings are difficult to implement in classroom situations.[84]

These issues can be summarised as in Table 4.2, using Pritchett's framework for categorising government's functions (see Table 3.4).

**Table 4.2: Problems in teacher training categorised by nature of tasks**

| Nature of tasks | Teacher training | |
|---|---|---|
| Concentrated (policymaking elite) | Lack of holistic framework and vision for training programmes | |
| Logistics | Lack of infrastructure at training centres–books, material, lecture halls, seating arrangements, hostel facilities. Selection of inappropriate trainers. | |
| Implementation-intensive service delivery–tasks which need iteration to adapt to local contexts | Content | Needs-based approach not followed in selecting content for trainings, thus seems irrelevant to teachers |
| | Support | Lack of on-going support to help teachers implement learnings from training |

Let us put this into perspective using an example. Dr Gawande observed that having a simple checklist of things to be done in a surgical room can be an effective way to reduce deaths. His team piloted the practice of preparing a checklist and adhering to it, in several places, and it was later taken up for implementation across several hospitals across several countries. Dr Gawande shares his experience of getting the adherence to checklist incorporated into surgery practice as follows:[85]

> "In Canada, just a couple years ago, they published results when Canada mandated that the checklist be used, all the hospitals signed off, absolutely- we're using the checklist, it's the law and we're abiding by the law. They measured three months after they had implemented and found no reduction in deaths. And as we peered in more closely, it's clear there wasn't a real implementation support or roll out, and we had to learn what that means. So in Scotland, they rolled it out, they mandated it, but they brought teams together to walk through every few months, what are you doing to roll this out? And they had coaches do site visits to

> say, what are the problems you're running into and let's help you solve them. They found it took them three years to create countrywide cultural change to create the adoption. But by that point, they had lowered their death rates 25%, enough that they documented 9,000 lives saved."

This experience suggests that merely mandating rules or just administering trainings may not be effective. It needs long-term commitment, focus and support to effectively coach with appropriate tools to be able to transform practices. We can observe that issues listed in Table 4.2 precisely point to lack of all these capabilities—lack of appropriate content suiting the needs and lack of long-term support. The solutions to these issues may seem straightforward—if there is a problem with content of teacher trainings, modify the content. If teachers need continuous support, provide it. If appropriate infrastructure is necessary to conduct trainings, provide them. These are easier said than done as evident from the example narrated by Dr Gawande. Execution is the key, which brings us to the issue of state capacity which in this context is the lack of ability to implement high skilled and low-stakes tasks requiring adaptation, on a long-term basis. Weak state capacity is thus the core reason behind ineffectiveness of teacher trainings. It must be recognised in any effort towards reforming teacher trainings. Otherwise we could end up focusing only on content and methodologies, which might not ultimately be effectively implemented.

# 5

# THE TWO PILLARS

In our discussion so far, we have explored the effects of weak state capacity. Two solutions are popularly recommended to address this challenge—decentralisation and providing incentives. These form the two pillars of reform.

## Decentralisation

In education, the need to decentralise is argued for by citing three reasons—it provides one with the autonomy to adjust to local needs, helps in reducing inefficiencies, and ushers in accountability.

Education is a complex phenomenon where solutions have to be customised to the context, and that this is not possible to achieve without giving autonomy to functionaries at the local level. Manabi Majumdar and Jos E Mooij carried out detailed interviews with head teachers of government schools to outline their powers and scope for decision-making.[86] Table 5.1 outlines a summary of those discussions.

**Table 5.1: Decision space for head teachers**

| Decision Space | **Range of choice** | **Comments by head teachers in a group interview; Kurnool, Andhra Pradesh; October 2004** |
|---|---|---|
| **Personnel** | | |
| Recruitment of teachers, promotions, transfers | No | "We can bring vacancies to the notice of the MEO (Mandal Education Officer)." |
| Disciplinary action | No | "We can report the matter to the MEO. The power we have is to grant special and casual leave." |
| Incentives to teachers | Restricted | "There are no methods to reward teachers, except by giving appreciation."<br>"We can nominate them for the 'best teacher' awards."<br>A fundamental difficulty is, however, that the headmasters felt they cannot assess the quality of their teachers |
| Training | No | No possibility to recommend teachers for particular training |
| Selection of para teachers, volunteers | No | "The SEC (School Education Committee) recommends and the DEO (District Education Officer) appoints." |
| Training of volunteers | No | This is done by the government. Of course, a headmaster can do something informally, but "there is no guarantee that the volunteer will be appointed again next year. Why should we invest time?" |
| **School governance** | | |
| School timings | No | "The DEO should decide this." |
| Detaining students | No | There is a state-wide no-detention policy |
| Relationship with parents | No but sabotaged | The dates of PTA (Parent-Teacher Association) and SEC meetings are prescribed by the department<br>"The government should not impose these dates. It should be done as per the convenience of the people." But in most cases the meetings are not held anyway. "Our meetings are limited to minute books." |
| **Finance** | | |
| Teaching material | Restricted | Every teacher gets Rs.500 to purchase teaching material<br>"As long as we produce the right bills, nobody does any verification." |

| | | |
|---|---|---|
| School development fund | Restricted | There are strict rules for which purposes this fund can be used |
| Raising money by introducing fees | No | This is not possible |
| Raising money by finding sponsors | Restricted | The head teachers in this interview had never tried this. "I simply have never thought of the possibility of raising money." In other districts, however, schools are encouraged to seek donations from individual or institutional sponsors |
| **Content of education** | | |
| Curriculum | No | "This should be set at the Central or state level." |
| Syllabus | No | "This should be set at the Central or state level." |
| Textbooks | No | "Teachers are consulted, and their experience is reflected in the textbooks." One of the six head teachers was in favour of district-level textbooks for subjects like social or environmental studies |
| Teaching methods | Restricted but claimed | The government imposes activity-based methods, but "teachers are best aware of the environment in which they teach". It is in this area that they claim decision space. "When the DIET lecturers give classes, we pretend to agree, but we do not follow them." |
| Student assessment | Restricted but not used | "In classes 1 to 5, we could assess the way we want, but classes 6 and 7 have to do the exams of the Common Examination Board." None of the six head teachers had, however, ever experimented with other assessment methods<br>"The MEO gives us forms (mark registers) on which we have to fill in the marks of the quarterly and annual exam."<br>"How can we use the notebooks to evaluate students, when parents are too poor to buy notebooks?"<br>"It is only possible to do a continuous assessment of the students when you have 20 students in the class, not more." |

Source: Majumdar and Mooij.[87]

Table 5.1 suggests that a head teacher or teachers do not decide most aspects of schools; thus, they have limited autonomy in terms of their decision-making powers. Such scenarios have resulted in strong demands for autonomy to teachers and schools.

Majumdar and Mooij also note that during their conversations, teachers and head teachers expressed strong resentment towards prescriptions that come from higher authorities. As they put it,

> "Most teachers felt very strongly that teaching methods should not be prescribed, but that teachers should be sovereign in this regard. This clearly is a reaction to the DPEP or SSA programmes promoting activity-based play-way methods. These methods, teachers argue, are very hard to apply in overcrowded classrooms and in situations of multi-grade teaching. Moreover, they argued that activity-based methods make it very difficult to complete the syllabus. They are, therefore, only applicable to the lower grades. In the words of a teacher in Kurnool, 'these methods are nice ideas, but they clearly come out of an AC office.' When teachers are nevertheless directed to use these methods, they feel their professional expertise is neglected, which in turn often leads to bitterness and resentment."

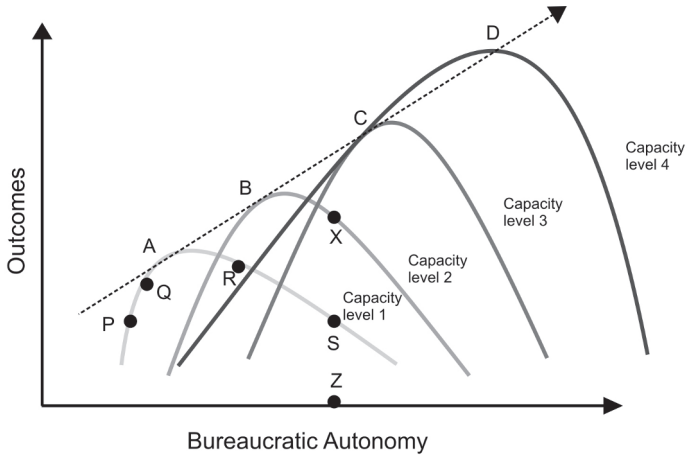
Centralised administrative decision-making leading to inefficiencies also increased the need and demands for decentralisation. It is argued that local functionaries have a better understanding of the needs, and hence are better positioned to take decisions regarding resources. Finally, the accountability base arguments suggest that devolving decision-making powers and involving communities in the decision-making process ensures bottom-up accountability.

On the other hand, it is argued that giving autonomy to weak (under-developed) systems can hurt instead of being beneficial. For instance, a study analysed the responses to questionnaires in the PISA survey about decision-making powers with schools, linking them with the PISA test scores. The results suggest that autonomy affects student achievement negatively in developing and low-performing countries, but positively in

developed and high-performing countries. Further, it observes that the negative effects in developing countries are most pronounced in decision-making areas relating to academic content.[88] Another study using scores of an international assessment called Trends in International Mathematics and Science Study (TIMSS), finds that, when teachers are given autonomy on curriculum, one of two things can happen; "if schools and teachers can use their intimate knowledge of their students to choose the best teaching method, then they can teach more effectively. But if they can use their influence, whether acting collectively or individually, to reduce their workload, then students' learning opportunities will suffer."[89]

It is hence argued against decentralisation in contexts of weak state capacity. But how do we reconcile this evidence with the narration of helplessness expressed and resentment expressed by teachers (Table 5.1). It is helpful to understand this conundrum using Fukuyama's autonomy vs. capacity framework. To recollect, Fukuyama suggests that the autonomy given to a bureaucracy should be proportional to its capacity. This framework customised to our context is shown in Figure 5.1.

**Figure 5.1: Autonomy – Capacity - Outcomes**[XIII]




XIII Image credits: Fukuyama(2013)

Figure 5.1 shows that, for any given capacity level, there is a point of autonomy, at which optimal outcomes can be achieved with that capacity. For instance, point A is the point of optimal outcome for capacity level 1. Further, capacity level 4 is greater than capacity level 3 and the outcomes at optimal autonomy point of capacity level 4 (point D) are higher than those at the optimal autonomy point (point C) of capacity level 3.

First, we must note that the shape of capacity curves in Figure 5.1 differ for each task. For the same capacity level, optimal autonomy points can vary with tasks. Hence, the effect of devolving powers regarding curriculum, as noted earlier, need not be the same as the effects of devolving powers regarding other aspects.

Second, for the systems at optimal autonomy points (point A) or to the right of it (points R and S), withholding decisions to give autonomy or reducing autonomy can settle us with low-level equilibrium (point A). We would ideally want to reach point D, which is also an optimal autonomy point, but for higher capacity. We can only reach this point by increasing capacity.

The challenge here being, such decisions to withhold increasing autonomy or decreasing autonomy come with their own costs and benefits. Benefits of decreasing autonomy, say from point S to point A, include the losses prevented due to misuse of autonomy. If the time taken to pursue alternate route, enhancing capacity, appears to be too long, then the losses prevented can be significant. Costs include foregone efforts of surmounting political economy and an opportunity to reach equilibrium at higher point. Often, decisions to devolve powers to lower levels include significant political costs. If autonomy gained with such investments is decreased, all the efforts that would have gone behind getting that autonomy will go wasted. When one is at a hard-earned higher autonomy point (say point S, on capacity level 1), there is an opportunity to reach higher levels (point X) by increasing capacity. One may lose out on such opportunity if autonomy is decreased. Thus, decisions to withhold or give autonomy should carefully consider the costs and benefits involved.

For the points to the left of optimal autonomy point (point A), increasing autonomy can improve outcomes. These tasks typically require autonomy to frontline functionary to implement them and tend to be autonomy starved. Hence, increasing autonomy is beneficial. One can use the 'need for iterative adaptation to perform the tasks', and aspects where efficiency can be increased by decreasing the response time to local issues, as the two thumb rules to identify such tasks.

As per the first thumb rule, teacher training is a key task that can be devolved to the lower levels, say to districts. We earlier discussed the key prerequisites of a teacher-training programme—addressing the needs of teachers, appropriate delivery of training, and continued support. Trainings based on these principles can be implemented by anyone of these: government, NGOs, private organisations, research institutes, etc. There can be numerous methods that can be used for improving teacher training programmes, such as: strengthening teacher education (pre-service), DIETs and support structures, use of technology, establishing more teacher training institutes but the key focus is execution and satisfying afore mentioned prerequisites. We have tried doing such trainings with government functionaries, and experience suggests that we have not succeeded. Perhaps it is time to think outside the traditional approach and see if more innovative training programmes can be built while still adhering to the above prerequisites.

We can give space to external organisations (NGOs, private organisations) to assist with teacher training programmes instead of mandating teachers to undergo training only through government agencies. Several models can be worked out for the same.

*Power to lower levels to decide the training organisations*: Districts or clusters or blocks (mandals) can be given powers and financial autonomy to use the money and invite external organisations to conduct trainings. There are several advantages to this approach. One, teachers can put forward their needs for the training, and an external organisation can customise programmes accordingly. If necessary, the government can specify broad

categories of training that one must definitely undergo. Two, teachers will have a wide range of offerings to choose from, rather than being forced to undergo training on the themes decided centrally. Three, external organisations can possibly ensure better on-going support, since their payment would depend on the quality of their service. Four, since such external training organisations focus on trainings, they tend to have greater expertise, which can be leveraged.

It is true that this approach has its own challenges, such as availability of credible organisations, drafting contract agreements, enforcement of these contracts, accountability; but these would be no different from any typical public-private engagement. Maybe there are only a few such organisations currently, but that is mainly because they are operating in a limited space—elite private schools which can afford such external services. The existence of such organisations even for the limited set of elite schools shows that there is potential for many more, if the right opportunity is available. In any case, the government can have a default option available through its existing machinery in the absence of availability of external organisations in some contexts. This may not be a panacea for all the issues in teacher training, or it might not resolve all of them immediately, but the approach deserves a chance.

*Vouchers to teachers*: Another approach could be to just give vouchers directly to teachers and teachers can avail these vouchers at training organisations or companies that they like. They can undergo training in aspects as per their requirements thus bridging the mismatch between teachers demands and training content. One should here be careful before getting into accrediting such organisations. One should not be tempted to accredit them based on input norms etc. Basic norms can be set but should ensure that they do not end up stifling the organisations.

One of the issues with the current teacher training programmes is that attendance is some times faked. Such problems might also arise with vouchers to teachers or if local governments are given powers to recruit external organisations to perform trainings but that should not be seen as a reason to not pursue this reform for four reasons.

One, we must acknowledge that the current form of training is not benefiting most teachers and any other proposal should be seen relative to this state of affairs.

Two, motivated teachers benefit from the choice. There is a spectrum of types of teachers from those who are motivated and committed to those who are not and evade. Those who resort to inappropriate means may still do so but choice in form of vouchers at least liberates those who are motivated and help them build their skills.

Three, choice to teachers should be seen as part of a broader framework of accountability. If such are embedded in weak systems, some motivated teachers may benefit and a significant section of teachers may still not benefit or not translate the learning from trainings into classroom practices. Accountability measures for outcomes can help contain this situation. If teachers or schools are made accountable for outcomes and then this should be viewed as giving them resources to support themselves to achieve the task.

Four, giving such choice eliminates alibis. Currently, improper trainings is a commonly cited alibi by teachers. We are not sure if that is the real constraint and if teachers who complain about trainings perform well if they are trained as per their choice. Giving teachers a choice to choose the trainings they wish to attend, will eliminate the alibi of improper trainings and help enforce accountability. It will now become easier for a monitoring authority to say - now that you are given choice to get the form of training that you need, can you deliver the outcomes?

In this discussion we should not forget about a significant section of teachers: those working in low-cost private schools. A significant number of students attend these low-cost private schools, as noted earlier. Many of these teachers might not have undergone proper training. In the wake of rising enrollments in low-cost private schools, we should also think of ways to train these teachers to help the students. Some private training organisations have come up to tap this market but low-cost private schools are often cash-starved to afford such external services.

In this scenario, skill training vouchers are worth trying out. Teachers can use the vouchers to get training at certified institutions or avail such services from private companies that can offer them. Some express concern that, why should the government pay for training of individuals, which will result in their personal gain? Our government already provides subsidised programmes and gives vouchers to upgrade skills such as carpentry and welding, which also result in gains to private individuals, so why can it not the same for education as well. Training teachers certainly will have better spill overs than many other sectors. The skilled teachers would help strengthen the education ecosystem and eventually help increase public gains. Children in low-cost private schools also constitute part of the government's responsibility. It is not fair to ignore these children because they went in search of better perceived opportunities. Equipping teachers in these schools with appropriate skills is one way of helping these children. Alternative models of setting up training institutes in partnership with elite private schools or encouraging group of private schools to set up training institutes can also be explored. Teachers of low-cost private schools can then avail training facilities at such schools and institutes.

The second thumb rule for decentralisation is to identify tasks where it can help by increasing efficiency. As per this thumb rule, teacher recruitments, transfers, procurements, can be devolved to the district level. In some states, though teachers are allocated district cadres, all of them have to take a test conducted at state-level and wait for a state-level notification. Teacher appointments are sometimes subject to political decisions where they are tried to fill around elections. This delay in appointments can hurt schools and students. Each district can recruit its own teachers instead of waiting for state-level approvals. If necessary, the question paper can be subject to approval at the state level, in a time-bound manner. Such approach can also address the concern of losing out on quality candidates if recruitments are done at a school level.

Similarly, it would be better if the districts can conduct their transfers as and when required, and if necessary, the state government can set a maximum period between consecutive cycles of transfers.

We can also devolve procurement of materials, printing textbooks to the district level. The curriculum and textbooks can be designed centrally, but printing of these textbooks can be organised at the district level to quickly address problems of late delivery, subject to constraints of economies of scale.

So far, we have discussed issues that can be devolved to the district level but there is a strong rationale to devolve some aspects to the school. Currently, our approach to reform is fragmented; we are viewing reform as reforming individual aspects—teacher trainings, assessments, building infrastructure. In reality, the basic operating unit of education is the school and the problems experienced by the system are around a school. Unless all of these issues arising around each school, which may differ with schools, are taken care of, it is difficult to achieve our goals.

If school-specific plans have to be implemented, schools have to be given autonomy and it requires strong leadership to envision and execute these plans. Duty of head teachers should not be seen as limited to looking at macro level administrative aspects of school. A good head teacher may also have to effectively monitor teachers, support them in classroom and related activities and involve parents and community to factor in their demands. All of this requires strong leadership skills and domain knowledge.

Nicholas Bloom of Stanford University along with other partners interviewed 1,800 head teachers of secondary schools across eight countries—Brazil, Canada, Germany, India, Italy, Sweden, the UK, and the US—to evaluate the quality of school management. The study finds that school's management quality is strongly correlated with children's performance. It also finds that autonomous schools have better management quality and that accountability to local governing body and head teacher are critical factors in management success.[90] Autonomy can be effective but in presence of strong accountability frameworks. Other evidence also suggests that improving school leadership can significantly improve the learning outcomes of students.[91] Despite such importance of school heads, they are currently seen as mere administrative heads

in India.[92] States like Jharkhand and Madhya Pradesh have more than 80% head teacher vacancies in primary schools.[93] Investing in building a community of school leaders thus needs to be a priority.

## Challenges in decentralisation

Analysing decentralisation from the perspective of state capacity gives us an understanding of the broader perspective and its necessity but there are also challenges in pursuing such reform. The first challenge in decentralisation is deciding the aspects of governance that have to be or can be decentralised, which was the subject of our discussion above.

The second challenge is the availability of credible monitoring systems or assessments. The advantage of centralised structures is that one knows what is supposed to be going on, making it easy to monitor. Decentralisation by definition breaks these standard approaches and hence also makes it difficult to monitor. It is argued that in such cases, outcomes and not approaches should be monitored. This underscores the importance of regular assessments to gauge performance, and necessary investments have to be made on this front.

The third challenge is designing the norms of decentralisation. Fruits of decentralisation can only be realised if the appropriate norms are set. For instance, consider the case of SSA grants to schools. In theory, powers are decentralised and funds are given to schools to spend on certain activities. But the norms for this grant approval can act as bottlenecks. The PAISA report documents the example of two schools in two neighbouring villages, in Maghra and Kharjama in Nalanda district of Bihar. The school in Maghra village was founded way back in 1939 and it has 1401 students, 16 classrooms and 19 teachers. The school in Kharjama is a relatively new one, founded in 2007 and it has 108 students, 3 classrooms and 2 teachers. Details of grants received by these schools as part of SSA are illustrated in Table 5.2.

**Table 5.2: Details of grants received by schools in Maghra and Kharjana villages (Rs)**

| Grants received | SSA norms | Maghra Upper Primary: Classes 1-8 | Kharjana New Primary: Classes 1-5 |
|---|---|---|---|
| School Maintenance Grant | More than 3 classrooms: 10,000; otherwise 5,000 | 15,000 | 5,000 |
| School Development Grant | Upper Primary: 7,000 Primary: 5,000 | 12,000 | 5,000 |
| TLM grant to teachers | 500 per teacher | 9,500 | 1,000 |
| Total | | 36,500 | 11,000 |
| Grants per student | | 26 | 101 |
| Grants per student (without TLM) | | 19 | 93 |
| Per child grant ratio | | **With teacher grant** | 1:4 |
| | | **Without teacher grant** | 1:5 |

TLM –Teaching learning materials

Source: PAISA.[94]

We may notice that, as per the norms (column 2), though Maghra has 10 times the strength of Kharjama, it only receives 3 times the money that Kharjama receives. Also, the school building in Maghra has greater maintenance costs because it's an old building. It also cannot use funds allocated for other purposes to renovate the buildings.

Another related aspect is the delay in fund flows. Even if some aspects are decentralised, issues such as delays in the flow of money can defeat the purpose. As mentioned earlier, PAISA study documented that around half of the schools do not receive money even by November, which is half-way past the academic year, leading to inefficiencies in

planning. Thus, even if certain functions are decentralised, inappropriate norms and process inefficiencies like delays in fund flow can create constraints.

The fourth challenge is ensuring that prerequisites are in place for the successful functioning of the task. For instance, if the task of designing curriculum is decentralised to schools, it will add to the workload of teachers. This may further result in negative effects if the necessary human resources are not provided to the schools, or if schools are not trained on how to design curriculum.

Decentralisation, as we discussed earlier, is also seen as a tool to ensure accountability by involving communities. A study conducted in Uttar Pradesh provides interesting insights into the challenges of ensuring community-based accountability, through SMCs or Village Education Councils (VECs).[95] One of the prerequisites for parents to be able to enforce accountability is to know the learning levels of their children. In this study, researchers provided information about the learning levels to parents in one group of schools and used another as a control group, where parents were given no information. The study found no improvement in the outcomes of children. In other words, telling parents that their children are not learning as much as they think was not of much help.

A similar initiative in Africa, where information was disseminated through community-based assessments, showed the same results.[96] Uwezo is a large-scale, citizen-led assessments initiative in Kenya, Uganda and Tanzania. It was expected that assessing children and giving that information to parents would lead to activism and more efforts to make teachers accountable, and thereby lead to an increase in learning outcomes of children. However, it turned out that it is not the case. The study notes some of the possible barriers to such actions; widespread norms against unofficial collective action; local level stakeholders felt they have little influence over key inputs of education; lack of information about government officials' responsibilities; and people tended to look to the elite for ideas and action. These insights can help in addressing issues.

The second prerequisite for successful functioning of community-based accountability is that parents should know their powers and responsibilities as part of SMCs. A third group of parents in the Uttar Pradesh study were informed of their powers and responsibilities, and VEC (SMC) meetings were facilitated, but still the students of these villages performed no better than the villages where no such meeting was held.

This suggests that communities face constraints in influencing schools and it emphasises the need to relook at our expectations from communities. Maybe they can be relied on to monitor visible activities like attendance in school but not aspects like classroom procedures, trainings or assessments. Some instances where community-led initiative seems to have worked are those where a local NGO strongly supported the activities.

Another concern with community-based accountability is the skewed social hierarchies in villages, which can be an impediment in enforcing accountability. It applies to community-based monitoring of schools too. This is a broader issue of governance across sectors. We as a nation have to yet transition into a robust self-governance mode; it is a work in progress.

It is also important to note that several governments made attempts in the past to decentralise decision making in education and also to empower and involve them in administration in schools. For instance, Lok Jumbish initiative in Rajasthan delegated powers to open and upgrade primary schools, create posts for teachers etc. to block level. Madhya Pradesh even gave powers to local bodies to appoint teachers of certain categories. The State Finance Commission of Madhya Pradesh had ensured transfer of 65% of the funds received at district level to village panchayats. These initiatives also aimed to make communities an active part of the school administration. There were also similar initiatives in Bihar, Kerala, Karnataka and other states. We can learn important lessons from these experiences.

Pursuing decentralisation on a project mode is detrimental in long-term and seems to be one of the common reasons for lack of sustainable results.

Time-bound project mode operation creates new sets of norms and rules while those in the regular system remain the same. It may thus become difficult to integrate these two later. Creating parallel structures also leads to conflict of interests and issues in coordination. It may not be possible to pursue long-term reforms of reorienting rules and organisations if it is carried out as project with sunset clause.

In some cases even though certain powers are delegated to local level, old hierarchical policies dominated. For instance, local bodies in Madhya Pradesh were given powers to appoint teachers but their transfers and other policies still remained with the state government leading to inefficiencies. Roles and responsibilities in the new system were not properly communicated resulting in overlap and confusion. For instance, in Madhya Pradesh, inspection powers were delegated to block level without dismantling posts in earlier system responsible for inspection of schools. In other cases, responsibilities are delegated without transferring corresponding powers and ensuring funds for the same. Certain powers were delegated through executive orders without any legislative backing making it easier to retract them. In some cases, though certain powers were devolved, state government still retained crucial powers. As mentioned earlier, powers to create posts was delegated but state government still retained powers to appoint and transfer teachers.[97]

These experiences suggest that operationalising decentralisation is not a sprint but a marathon. It should not be taken as a time-bound project but should be seen as a long-term commitment with a strong belief and vision to make it work. It needs continuous tweaking and iteration of maze of rules and regulations and requires coordination across bodies to make the processes smoother and efficient. Any attempts to pursue short cuts or lack of seriousness may not yield results and may end up as one another unsuccessful attempt in the history.

## Incentives

Incentives to functionaries can enhance the capacity through the first component of the state capacity (Figure 3.4), nature of the functionaries, mainly teachers in our case. Public school teachers are the first to be blamed in any discussion on government school education in India. Any solution to address this issue has to first start by empathising with them and solving their problems. While incentives may help them perform better, identifying issues that demotivate them or trouble them and resolving them can also be of a great help.

### Teachers' problems

PROBE 2006 reported that for some teachers, getting to school was an ordeal. Teachers at times cycled 30 kilometres to school, and others dependent on public transport complained of infrequent bus service. Nearly half of the women teachers cited the difficult commute as a problem. They also mentioned safety issues, such as travelling through a jungle, isolated locations of schools or presence of drunken men around the school.

Vimala Ramachandran detailed the constraints faced by teachers in her article, 'Why school teachers are demotivated and disheartened'.[98] She cites constraints faced by teachers as follows.

First, teacher recruitments have not kept up their pace with the rapid enrolment of students resulting in situations where one or at the most two teachers manage five classes, and teacher pupil ratios are high.

Second, there is a wide social distance between teachers and children in government schools, which cater to the very poor.

Third, teachers lack the skills to manage diverse classrooms with students from different social backgrounds and of different learning levels. There is a mismatch between the needs of teachers and content in training programmes.

Fourth, corruption and favouritism have vitiated the teaching environment. Teacher transfers are politicised. One may have to pay money or develop networks to get transfers, promotions and special assignments. Teachers in leadership positions rarely attend schools and their activity is least monitored. This environment is demotivating to honest and hardworking teachers.

Fifth, teachers' unions and block- and district-level administrators claim that they have to do a range of non-teaching tasks, which took them away from the classroom.

Sixth, some teachers feel training as a burden because trainings either do not address their needs or methodologies discussed in trainings are not implementable in their classrooms.

In 'Education and inequality in India–a classroom view', Majumdar and Mooij document two additional factors.[99]

*Lack of recognition* – "During focused group discussions in Andhra Pradesh, school teachers expressed a strong desire for not only regaining some of their status and respect from society, but also for explicit appreciation from their superiors in the government. They were even prepared for more serious monitoring and inspection in order to earn praise."

*Lack of autonomy* – "Teachers were neither encouraged nor challenged to function as professional cadres. Discussions with teachers showed little scope for their inputs in curriculum setting, textbook selection, or for inter-school networks to facilitate peer interaction, support and professional exchange of ideas regarding innovative pedagogic practices.

At times diktats from above were found unsuitable and lay unheeded in files. There was also resentment against directives issued without consulting teachers. One instance was the government decision to impose a new evaluation system—external evaluation—of Class 4 children. Exams would be conducted on three consecutive days, with tests on two subjects each day. A teacher said it was unfair to make small children sit for two exams per day. This would also be used to grade schools, with no

consideration for the uneven backgrounds and conditions of different schools. For instance, in one Hindi-medium school, students had not even received books that year."

In summary, teachers' problems can be categorised as problems in school due to lack of infrastructure (including access) and overcrowded classrooms; lack of appropriate training to deal with situations in classrooms; burden of non-academic tasks; unfair transfer and promotion policies; and lack of recognition and autonomy.

Addressing these issues can go a long way in preventing teachers from getting demotivated. If they are not addressed or at least efforts are not made, they can become alibis for non-performance. The infrastructural issues like lack of enough teachers, toilets, textbooks are easy to identify and can be addressed. We already discussed ideas to address issues of mismatch between teachers' needs and content of teachers' trainings. The key to this approach is to consider teachers' feedback and voice in designing programmes. Unfair transfer policies can be addressed by reducing discretion in transfers and setting up standard procedures for transfers based ensuring transparency, the way counselling procedure is carried out for allocating seats in engineering colleges.

We also discussed about autonomy to schools and teachers in detail but it is worth reiterating it. Some issues may not seem grave but they can turn out to be real pain points for teachers if they are to face those daily. For instance, in some states the starting time and closing time of schools are fixed. In some villages, the first bus to the village reaches after the starting time of the school and sometimes the last bus from the village leaves before the school ends. It is a daily hassle for teachers to deal with these issues. The inability to stick to these timings can become a tool for harassment. Even if one does not want to break the rules, such situations bring in unnecessary ethical conundrums. Some teachers travel several hours daily using multiple modes of transport to reach schools and the least we can do to honour that is to allow them to decide the starting time of school, may be in consultation with School Management Committees.

Lack of recognition is the remaining aspect. A lot can be innovated in this area at the local level. Some of those ideas could be:

One, creating a local community of teachers to recognise and reward innovations. Best teacher awards are regularly given to teachers but these are either perceived to be politicised or unachievable. It is also not possible to recognise the efforts of individual innovations in classrooms with a single award. Thus, a community of local teachers can be created where these micro innovations are recognised, appreciated, rewarded and celebrated.

Two, teachers who guide students in extra-curricular tasks such as participation in inter-school competitions can be given extra points. These points can be used while preparing the ranking list for teacher transfers, where the person with more points gets first preference to choose the place of posting.

Three, increasing levels of hierarchy in public teacher service. The unique feature of public teacher service is that there are only two to three promotions possible in a career of 30-35 years. Some with higher degrees go on to become lecturers or go to other administrative posts but they are very few in number. A promotion once in ten years is surely not an encouraging prospect. One can create more levels of hierarchy with a definite career path. Even if they do not necessarily differ much in pay scale but the fact that one is progressing along a career path can act as a booster.

## Monetary incentives – evidence, concerns and challenges

Approaches discussed so far to sustain motivation of teachers do not involve money. It is argued that one of the reasons for the low performance of teachers is that they have no incentive to excel; those who work hard are not rewarded and are treated at par with other teachers. Hence, providing monetary incentives to teachers based on their performance, as measured by the learning outcomes of the children they have taught, can improve their efforts. One must note that incentive systems are different from accountability systems. Incentive systems pay extra money conditional on performance and there is no penalty for non-performance, while accountability systems may incentivise and also penalise teachers, based on the performance of students, with penalties ranging from salary cuts to termination of service. Several studies have been conducted to understand the phenomenon of monetary incentives:

In a randomised evaluation conducted in Andhra Pradesh, teachers in one group of 100 schools across five districts were paid Rs.500 for every percentage point of mean improvement in test scores of their students. A group of teachers in another 100 schools (control group) did not receive any incentive and worked in the status quo conditions. The study found that students who completed their full five years of primary school under the incentive programme performed significantly better than those in control schools. Improvements are not seen just in math and language for which teachers were incentivised but also in science and social studies where there were no incentives attached with the scores on these subjects. It also found that students scored significantly better not just on questions which can be answered through rote learning but also on questions which test conceptual understanding.[100]

In a study conducted in Kenya, incentives were provided to teachers based on the performance of their school in exams conducted by government for Classes 4-8.[101] Students in treatment schools had higher scores during the programme but did not maintain the scores after the programme ended. Further, teacher attendance did not improve, homework assignments did not increase, and the pedagogy did not change.

A study conducted in Chicago gave bonus money which was paid to a group of teachers upfront at the beginning of the school year, with an agreement that they have to return some or all of it at the end of the year, based on their performance. Another group of teachers were told that they would be paid money after achieving results, as per traditional structure of incentives. It found that giving bonus upfront led to an increase in math scores while incentives designed as per the standard structure (pay at the end of the school year) had smaller but insignificant effects.[102]

Another randomised evaluation conducted in New York that provided incentives to teachers gave schools the discretion on how to distribute the incentives. It did not lead to any increase in student performance.[103]

These pieces of evidence present mixed and varied results of monetary incentives. Exploring the mechanisms behind these results further may help us understand the nuances of incentive systems. In the Kenyan study, the incentives were based on exams conducted by the government, which are based on the official curriculum. The NGO that administered the programme had also conducted an examination of its own. Students in incentive schools performed better than those in non-incentive schools on assessments conducted by government but did not display those gains on assessment conducted by NGO. It is possible that teachers taught students only as per the expectations of the test that determined the incentives. Enhancing the quality of this assessment may show results if teachers are teaching to this test. Another possibility is that as the incentive programme was temporary, the teachers may not have made long-term investments in enhancing their skills.

The study in Chicago, where bonus was paid at the beginning of the academic year and was supposed to be returned at the end on failing to perform, demonstrates the phenomenon of loss aversion. People seem to be more responsive to incentives or protocols framed in terms of losses than to protocols framed as gains. In simpler words, the fear of losing money may propel people to work harder than the prospect of getting money.

In the New York study where schools had the discretion to decide the design of distribution of incentives to teachers ended up paying all teachers equally defeating the purpose of incentives.

**Challenges involved in performance-based monetary incentives**

Insights from the research discussed so far suggest that structure and design of monetary incentives is crucial to its success. There are several challenges involved in designing the structure of monetary incentives. It is useful to understand them to leverage the power of incentives.

1. *Amount of incentive*: The 'stakes' often determine people's response to incentives. The amount of money in this context decides the stakes and the response of people. If the incentive is small, it may not be motivating enough for teachers to put in extra effort. If the incentives are large, however, it may increase the propensity to cheat or game the system, which is relatively easy to do in case of education.

2. *Threshold effects*: If the incentive is based on achieving a certain threshold and is not paid for every percentage improvement, teachers might just focus on the well-performing students to boost the average score, or they may prevent low-performing students from taking the test.

3. *Who decides the incentive*: As discussed, the authority deciding the incentive can also matter. If the school is the decision-making authority, they may distribute incentives equally among all teachers and not on the basis of individual performance defeating their purpose.

4. *Individual vs. group-based incentives*: Individual incentives are those which are decided based on the performance of a particular individual alone. Group-based incentives are those which are given to a school as a whole. All teachers do not necessarily work in similar environment. So, individual-based incentives may not factor in such diverse school environments. While group-based incentives can address it to an extent, it may suffer from free rider problems where some teachers in school work and the benefit is enjoyed by all.

5. *Improvement over baseline vs. percentile*: Incentives can be calculated in broadly two ways. One way is to calculate the improvement of students of a teacher over their own baseline test scores. The other way is to calculate based on the percentile score or rank of students of a teacher among all students in a district or a state or a locality.

Calculating the performance based on improvements over baseline may be disadvantageous to teachers who already have students with higher baseline scores. This is a genuine concern and even in the large-scale study in Andhra Pradesh discussed above, researchers had to adjust for this after the first two years, calculating targeted scores for each child and measuring against the percentage achieved. When such systems are implemented on a large scale, concerns like these may result in political resistance, especially if there are lobby groups strongly working against implementing monetary incentives. Over time teachers may also feel that such systems are unfair.

If incentives are calculated over baseline scores of the same students teachers can have an estimate of the efforts required to reach certain goals. If incentives are calculated as per percentile or rank of students across all schools, it makes it difficult for teachers to predict the efforts required to achieve certain ranking. If the procedure is made too complex then teachers may stop putting additional efforts.

6. *Interaction of monetary incentives with other incentive structures in the system:* Efforts of teachers are a result of all incentive mechanisms present in the system. If there are already strong incentives and penalties in the system, providing incentives in such context may not yield results because teachers are already working to their full potential due to the pre-existing incentives.

7. *Framing of incentives and feasibility of achieving them:* We discussed that if incentives are framed as a potential loss (by giving money upfront) as opposed to potential gain, it can possibly result in different outcomes. In such contexts, one should also be cautious about the metrics of the incentive system. If the metrics are designed to make it difficult to achieve the incentives, then teachers may end up 'not' putting efforts because they

would not be getting the incentive anyway. If money is given upfront to teachers, and the incentive metrics are perceived as unachievable by teachers, and if they have to end up paying the money back, they might view returning the money as a fine for not working and try to justify their actions.

8. *Quality and credibility of assessments:* If incentives are based on assessments and if those assessments are of poor quality (testing only memorisation or rote skills), then teachers may end up emphasising these skills more. If these assessments are appropriate, it will act as an incentive for teachers to teach to the higher level.

In politically sensitive contexts, it is necessary that teachers should perceive these assessments as credible and as a measure of the true abilities of the child—else this can be another point of objection of lobby groups that advocate against monetary incentives.

9. *Administrative issues:* Administrative issues with conducting assessments, such as transferring question papers, preventing cheating in examination and other issues can also potentially affect the incentive system. This again takes us back to the capacity of state to implement tasks of such nature.

**Concerns regarding monetary incentives:**

1. *Teaching to the test:* It is argued that incentivising teachers for the performance of students on specific assessments makes them narrow down the teaching to only those concepts relevant for the assessments. The argument that monetary incentives for performance of students will narrow the teaching may not be appropriate in systems of weak capacity because the increase in efforts due to these incentives will at least result in some outcomes which is better than the status quo.

If assessments are appropriately designed to test the conceptual understanding and not rote learning then even teaching to such test can help students acquire such skills.

2. *Monetising non-monetary preferences:*[104] It is argued that there are certain aspects in life which resist monetisation—pure friendship, for example.

Teaching is also one such activity where the passion to teach is an important factor. Monetising such preferences may not be effective.

It may be true that some people teach out of passion but it should not mean that they need not be paid for it. Money is a necessary condition but might not be a sufficient condition. It is understandable that one should rekindle the passion to teach in teachers, but monetary incentives can be complementary to other approaches and it need not be seen as a zero sum game.

3. *Monetary incentives are not sustainable in the long term:* It is argued that monetary incentives are not sustainable in the long term, as teachers may find it motivating initially but this may fade out with time. Though the evidence from the five-yearlong study of Andhra Pradesh suggests that this need not be the case, it can be a concern. Hence, these incentives should be adapted to changing circumstances and be revisited periodically.

4. *Will such initiatives work in a government set-up?* Some of the studies demonstrating the positive effects of monetary incentives are cases where an NGO provided these incentives. Incentives in the Andhra Pradesh study discussed above were also given by an NGO. It is not known if the same effects will persist if implemented through government machinery.

In summary, performance based monetary incentives can be a cost-effective way of improving teacher performance but their structure and design is crucial. It can be a politically sensitive decision, considering the monetary aspects involved and the complexity in design. It is also possible that we might be over-estimating the political ramifications of these and other cited side effects but we can only know that once these are implemented. We may also be over estimating the resistance to such initiatives. For instance, 85% of teachers in the Andhra Pradesh study discussed above reported a favourable opinion about the idea of performance based monetary incentives and 68% mentioned that the government should try to scale up programmes of the sort implemented under the project. Hence, such initiatives should be actively considered at least for pilot purposes.

**Monetary incentives based on attendance**

Biometric attendance is becoming a popular tool to monitor absence and delays by government functionaries. A study in non-formal schools in Udaipur, Rajasthan, where teacher absence rates were high suggests that introducing technical tools for monitoring (cameras which capture pictures with time stamp and teachers being required to send two pictures every day, one in the morning and other in the evening) reduced absence rates and had a large impact on student outcomes.[105]

Some oppose this idea based on ethical and moral concerns. It is argued that introducing such monitoring mechanisms leads to a police raj and creates a state of distrust, which is not desirable in the context of schools. The union government launched an online dashboard, *attendance.gov.in*, where the attendance of its employees can be tracked through the Aadhar-linked biometric systems. In this context, political scientist, Pratap Bhanu Mehta argued: "Short-term discipline is being secured at the price of entrenching a long-term culture of suspicion. No society can flourish on such a foundation."[106]

Such arguments ignore the context of the state capacity. As discussed earlier, the path for reform from poor to good state can be different from the reform path for taking systems from good to best. Monitoring attendance is a tool, which can help in transitioning from poor state to a good state and hence should be looked at in this context. Nurturing intrinsic motivation and working based solely on trust may work well for taking a system from good state to best but not necessarily in context of weak states.

It might be true that ensuring attendance alone may not give results, but it is a necessary condition for any further action to take place. In contexts of weak state capacity, where there is in general a lack of seriousness about rules, enforcing this may at least bring teachers to schools and also convey seriousness. This approach may not be appropriate once we reach a 'good state' and aspire to be an 'ideal state'. It will have to be adapted accordingly at that stage.

Finally, it is interesting to note that monetary incentives in education are mostly discussed regarding teachers or parents or students. It may be worth exploring such systems for CRCCs too. Administering incentive systems can be easier because CRCCs are small in number as compared to teachers and that enhancing performance of one CRCC can influence multiple teachers. It is true that the pressing problems of CRCCs like workload etc. may have to addressed to enhance their performance in the long term but given the existing constraints, till the time the system changes, providing incentives can be effective, at least in the short term.

# 6

# ANOTHER NEW BEGINNING

Douglass C. North is a famous economist and a Nobel laureate. One of his collaborators John Joseph Wallis wrote about him as, "North's genius is figuring out what question to ask next, which often comes as an answer to the question 'What can't I explain with my current conceptual framework?'"[107]

A significant part of the discussion so far has been around state capacity. We may also have to ask the same question, what can't we explain with our current framework of state capacity as critical constraint? In other words, if state capacity strengthens tomorrow by a miracle, will that be sufficient, and will that lead to outcomes? To answer this question, it is instructive to look at contexts with strong capacity, both in India and abroad. In India, the elite private schools do not have the oft-mentioned issues related to public schools. Teachers are regular; there is considerable accountability and monitoring. Similarly, there are many countries with strong capacity. What, then, determines the difference between them?

Having the capacity to implement policies is different from using it towards a specific goal. At this stage, the technical aspects of education, and the policies to be implemented using this state capacity, become important. One such technical aspect is the quality of board examinations.

Board examinations in India today serve three purposes. One, they set the expectations from the school system, because most schools use these results as a proxy of their efforts in their communication with parents, and hence teach keeping these exams in mind, at least in Class 10. Two, the results of board exams are used as a signal of the ability of a child. Performing well in board examinations need not mean that the student is doing well, but not performing well is considered a negative signal. Three, passing board exams also serves as a certificate of minimum qualification, which is used as an eligibility criterion for low-end jobs.

In this context, there are two issues with the board examinations as they are conducted today. The first issue is that they are not serving any of the above-mentioned purposes effectively. Expectations of the system from students and schools, as indicated by the standard of board examinations, are low. They can be called as one of the major source of rote-learning and most schools teach only up to the level required to excel in board exams. This is artificially limiting the potential of even those schools and students with the capability to do much more. One solution to this can be to design good, standard question papers and distribute these to schools to educate them about standards. But many schools will have no incentive to adhere to them because they are judged by the board exams at the end of the day and not by these standards. Some schools might change their ways upon mere provision of information on standards, but those will only be the exceptions. Moreover, the issue of lack of credible systems to distinguish good students remains unaddressed.

Board exam results are also not seen as a reliable signal of capability and knowledge of students. Today one cannot distinguish from their board examination scores between a student who has undergone thorough grooming and another who has rote-learned. This is also a disincentive to schools, which put in genuine efforts to impart good education, because there is no reliable metric that can be upheld to parents that distinguishes their students/school from others.

The second issue is the multiplicity of the objectives of the exam. We are using the board examination both to certify minimum qualifications and also to signal the capability of students. The net result is that it is doing neither. It is similar to using the results of a single driving exam to both decide the eligibility for licence and also to identify Fernando Alonsos and Michael Schumachers from among the licence seekers. An examination can only distinguish between students if there are some good standard questions that cannot be answered by everyone. Such questions improve the signalling capability of the exam but those who are attempting this exam to prove minimum competencies will be at the losing end. Since there is a threat of many students failing, this makes it a politically difficult decision. Changing questions is easy but systems take long to respond and adjust to that and meanwhile those who do not have such support structures may get affected resulting in political backlash. If the exam is designed to assess minimum competencies, it loses its signalling power.

The solution to this conundrum can be to split the exam: have two exams for each subject—advanced and basic. Students can have the option to write one or both. Advanced exams will have questions of high standard,[XIV] which can be attempted by students who want to use these results to signal their higher ability in that subject. All students who want to use this exam to prove their minimum competencies will only attempt the basic version. This will also allow flexibility in terms of interest areas of students; one can take the advanced exam in English and the basic exam in math. The advanced version of the exam sets high benchmarks for those who desire it and are capable of achieving it, while the basic version suits the purpose of those who want to pursue different interests. This separation also removes the scope for political pressures and thus helps in effectively achieving the purpose of both signalling capability and certification of minimum competencies.

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XIV Some argue that improving the quality of board exam will make it a high-stakes examination. Appendix III argues that this need not necessarily be so.

There can be two potential concerns with such reform. The first concern is that it can skew students towards math and sciences, with students focusing more on advanced versions of these exams, neglecting other subjects. But one must remember that students would be required to pass basic courses in other subjects that will be of today's standard level which can be slowly improved. The net result in the new system (advanced math + basics of other subjects) would be more than the current (basic math + basics of other subjects).

The second concern is that segregating into streams can deny opportunities to children who fail to perform at that stage of life but improve later. One must note that students are not being segregated here and the type of examination attempted is not being mandated by government as eligibility criteria for pursuing higher studies.

Finally, one must note that merely dividing exam into two components may not serve the purpose unless the quality of these exams is enhanced to test real understanding and not memory or rote learning alone.

There can also be other approaches to achieve the purpose of signalling expectations through board exams. For instance, by adding some percentage of higher order questions in the current exam. It might marginally solve the problem but since the marks for each question are not revealed, it hardly sets expectations. Dividing the exam into multiple versions is just a proposal but the idea is to enhance quality of board exams to set expectations. If the same can be achieved more effectively in the short term, with other proposals, we need to consider them.

## Other important problems

Alongside improving state capacity, it is important to note some important issues other than those discussed in our journey from a bird's eye view and from ground zero, which can set policy directions. The idea again is not to prescribe solutions but to highlight them.

1. *Imparting literacy to the existing illiterate population*: Most of the discussion in the previous sections was about educating children in school, but what about adults who are illiterate? Literacy is empowerment—it reduces dependency and endows dignity. There are 28.7 crore illiterate adults in India, as per some reports.[108] Equipping them with basic reading and writing skills is a necessary but challenging task.

Brij Kothari pioneered the approach of Same Language Subtitling (SLS), where the lyrics of a song or the text of a speech is displayed in the same language as the audio. The idea is that when one listens to the audio along with the subtitles, one can associate the letters with sounds and over time it can build reading skills. Kothari and his team conducted tests in multiple contexts and found encouraging results.[109] In one interesting study, a weekly 30-minute television programme of Gujarati film songs was telecast across Gujarat with subtitles in the same language which improved reading ability of people.[110]

In Los Angeles, a mobile-based adult literacy intervention called Cell-Ed provides lessons through a simple cell phone. Users have to activate it by calling a telephone number. The course is divided into 437 micro-modules where each micro-module was a one to three minute audio. Assignments are sent in the form of a text message and the user has to reply to that text message. If the user passes the module, then (s)he is promoted to the next module. A randomised evaluation studying its effect found positive results.[111]

The limitation of the Cell-Ed approach is that it is dependent on the user's initiative, while the SLS approach touches people invisibly. Several other possible approaches can also be tried out.

2. *Career guidance and mentorship*: We live in a world that seems saturated with information, yet at times we reach out to people for guidance and suggestions. That is because there is a difference between availing information and mentorship. Students in urban areas, with educated parents are exposed to diverse opportunities and have channels to seek guidance. This might not be the case for those living in rural areas not integrated with the information world. Even in urban communities, many people owe their success to information or guidance from a mentor, who showed them the way.

Dr Anirudh Krishna of Duke University, surveyed 1,500 new entrants to a variety of engineering colleges, business schools and higher civil services. He notes:

> "Individuals who have succeeded in surmounting these obstacles have almost invariably been assisted by a relative or friend who motivated and inspired these students, providing them with mentorship along with career information and advice."[112]

This is relatable to many of our experiences.

The policy lesson here is the need to bridge this information and mentorship gap. The approaches to address this issue can vary, subject to innovation in thinking. Some straightforward approaches include sharing a booklet on career guidance or organising career fairs.

3. *Demonstration of success of education*: The studies conducted by Dr Krishna also suggested that "the longer the time spent in rural areas and studying at a village school, the smaller are the chances of making it into gateway education institution, such as a medical or engineering college or MBA school".[113] He further notes from the survey results:

> "Not one child of an agriculturist parent educated in a village school throughout was part of the entering class of the top-tier business school in our sample. In middle-tier institutions, such individuals constituted no more than 3% of the total intake. Even these individuals were mostly not from a poorer segment.

> If one is rural and poor or rural and poor and female — that is, if one has two or more handicaps — then one's chances of making it into any gateway institution or higher-paying job are virtually non-existent. It should not be surprising then to find that young people in villages rarely aspire to higher paying positions. When none before them has made it to any of these places, from whom will they get guidance and motivation?"

We thus need successful examples from their living communities of the poor to act as a strong demonstration of success and show the possibilities and opportunities, thereby motivating them.

4. *Nurturing gifted children*: Most of the discourse on school education is about stopping children from falling behind or bringing failing children to an agreeable level but students at the positive extreme are less talked about. Mensa, the world's largest and most prestigious high IQ society uses an IQ standardised intelligence test to determine its membership. Mensa administered this IQ test to more than 4,000 underprivileged children in Delhi and found that 102 students scored enough to be in a 'highly gifted' category. These students typically are from poor background and their parents are daily labourers, rickshaw pullers, and street vendors. Some of them do not have proper clothing and food. Mensa is mentoring them, providing necessary financial and emotional support.[114] We may need many such initiatives to spot, encourage and nurture bright talents.

5. *Children of seasonal migrants*: Seasonal migration has increased in India, with not so encouraging prospects in agriculture and greater availability of low-income jobs in urban India. When parents migrate, often they either take their children along or ask the older children to take care of their homes, leading to a break in their education. Some NGOs have set up local schools for migrant workers near construction sites but it may have to be dealt more actively.

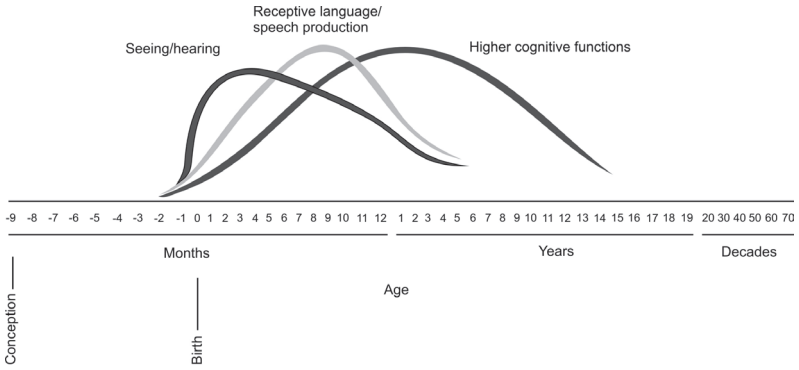
6. *Educating differently abled children*: Some estimates say that 10-15% of students in India are dyslexics.[115] We need approaches to identify, diagnose and support such children accordingly.

7. *Transition from mother tongue to English*: Many studies suggest that it is better to educate first-generation learners in their mother tongue. Teaching in a foreign language can be taxing for children, limiting their comprehension powers, and increasing the chances of their falling behind. But higher educational institutions function in English and it has become an important skill in the private sector, with increasing economic returns for fluency in English. It is estimated that being fluent in English increases the hourly wages of men by 34% and of women by 22%.[116] Children who study in their mother tongue in school find it difficult to transition to English and can lag behind or be at a disadvantage when they enter the job market.

Though children can be taught in their mother tongue in primary school, they may have to gain English skills at some point, preferably while still in school. Managing this transition is a challenge and has to be one of the policy priorities.

8. *Early Childhood Development*: Early years of childhood are critical for development of a child. Figure 6.1 illustrates human brain development and time periods corresponding to development of certain abilities.

**Figure 6.1: Human brain development**[XV]




Source: Grantham-McGregor, et al.[117]

XV Image credits: Ganimian, Alejandro J. 2015. Improving education in developing countries: Lessons from rigorous impact evaluations. 12 October. http://scholar.harvard.edu/alejandro_ganimian/presentations/improving-education-developing-countries-lessons-rigorous-impact

One can observe that it is easier to mould children in early years than at later stages. Thus, it is necessary to work on these aspects. One of the important aspects of early childhood development is nutrition. Despite the acknowledgement of the necessity of nutrition, the nutrition figures are not encouraging. An NGO, Naandi Foundation conducted a survey on malnutrition called Hungama for Change. In its 100 focus districts, it found that 42% children under five were underweight and 59% were stunted.[118] It further found that only 11% mothers were reported to have used soap to wash their hands before a meal and 19% after visiting the toilet. Even communicating the importance of simple practices as washing hands can be of great help. Even if students miss out nutrition in early age, it can still be corrected. Evidence from Andhra Pradesh on the mid-day meal scheme suggests it has been successful in compensating for early nutritional deprivation.[119]

9. *Incentives to parents and students to increase school attendance*: Poor attendance of children is one of the most commonly cited problems. Some argue that children do not attend school because they learn nothing there; others say it is because they do not value education. Both may be true, depending on the context. Several approaches, including incentives to parents and students have been tried out, but with mixed results.

An intervention conducted in Gurgaon, Haryana provided incentives to parents and students—cash and toys, respectively.[120] It found that extending cash incentives to parents was effective in the case of high-performing students, while giving them to students was effective in the case of low-performing students. Another study, in Ahmedabad, Gujarat, provided incentives to students of Gyanshala (non-formal school) for attending a target number of school days.[121] Though the average attendance increased during the intervention period, attendance levels fell back to normal in the case of students with high attendance at baseline, while the post-intervention attendance ended up being lower than the pre-intervention attendance rates for students who had low attendance to begin with. This highlights the complexities in the monetary incentive-based approach to increase attendance, but it is an issue needing attention.

10. *Positive economic shocks can lead to dropouts*: When there is a local industry boom with good wages for non-skilled labour, it may make sense in the short term for some students (families) to drop studies and earn instead. This was observed in the US when fracking (a method to extract oil) became widespread in extraction from shale and oil gas reserves. It increased the number of high school dropouts, especially of male students.[122] A similar phenomenon was observed in India in the case of Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA). It is estimated that each year of exposure to MNREGA decreases school enrollment by two percentage points and math scores by 2% of standard deviation among children aged 13-16.[123]

Is this a matter of concern? It depends on the type of jobs being generated. If the jobs generated have long-term prospects, or if it takes at least one generation for these skills to become obsolete, then it can be beneficial. People who take up these jobs would continue working for significant time. With stable incomes, they can make long-term investments in their children's education, which hopefully moves them up the economic ladder. This would also incentivise people to migrate to places closer to industries and urban areas which offer better access to educational and health facilities.

Instead, if the jobs produced in local economies are temporary and fade away after a few years, households might have earned some income during the period but would not have attained education if they had dropped out of school. This can trap them in a complex situation where they find it difficult to come back to school and the skills attained by them in one industry are not transferable to another industry. This does not mean these industries are not desirable or should be obstructed. One should be cautious and aware of this. This also illustrates the necessity to devise ways to bring out of children into school and ensure vocational training programmes.

One can list many more problems; this is only an effort to highlight few of them. The solutions to all the problems above need not come from the government alone. Tackling these problems might need a mixed approach, but it is important to first take cognisance of these problems.

# 7

# YOU CAN IGNORE BUT NOT DENY

In India and across the world, the demand for education is increasing, as it has become an important tool for social mobility; and a crucial factor in determining the economic status and growth of an individual. The necessity of education is further amplified due to the changing nature of jobs and their requirements. For instance, consider the phenomenon of job polarisation. One can broadly categorise jobs into three types—abstract, routine and manual. Abstract jobs are high-skilled jobs or those, which require lots of thinking. Routine tasks such as those of housemaids and gardeners are those which are relatively low skilled but cannot be easily automated, at least as of today. Manual jobs involve repetitive actions, like assembly-line workers which are relatively easy to automate. With the advent of technology, the proportion of manual jobs is declining due to automation. It is thus risky for someone to be doing a job of manual category. Also, during times of economic downturn, like the 2008 recession, the worst-hit were people performing manual tasks, and it also took them more time to recover.[124] To ensure security and stability, one

can perform routine tasks like a housemaid but it does not ensure a better living. So, the best bet for someone aspiring for a comfortable life is to get a job in the abstract category or if they cannot do in their lifetime, at least ensure that their children get there. Education is an important factor which helps one reach there.

The increase in demand for education and the government's efforts to ensure access to students has increased enrollments in schools. This has brought to light deficiencies of the public school systems. It is perceived that going to a private school may not result in success but going to a government school will certainly ensure failure. The increase in shift to private schools may not be only due to increasing incomes. A survey notes that villages with high teacher absence in public schools are significantly more likely to have private schools, suggesting that failure of public schools is one of the reasons for the shift and not just increasing incomes.[125]

Thus, the increasing demand for education, perceived failure of public schools and other needs of parents, like an English-medium education, have resulted in an increasing shift towards private systems of schooling. We noted earlier that, in India, the percentage of rural children enrolled in private schools in the age of 6-15 has increased from 18.7% in 2006 to 30.8% in 2014. If the trend continues, it may increase further. The percentage of students going to private schools is above 50% in big states like Andhra Pradesh, Uttar Pradesh, Tamil Nadu, Maharashtra, and as high as 80% in Kerala, as Table 2.3 showed. The numbers are by no means insignificant. When more than 50% of students in some states and one-third of total students are attending private schools, the existence of these schools cannot be ignored. But the discourse on reforming school education generally tends to only focus on government schools and not on private schools. Whether it is desirable or not, whether we like it or not, there are a significant proportion of students outside the government school system and hence we need to think of these students, and of the private schools, when reforming school education.

## Private but not-for-profit

The first issue in exploring the private school phenomenon lies in the naming itself. The word 'private' is generally associated with entities run by individuals with profit motive. Initiatives by individuals without profit motive are either called NGOs or not-for-profit enterprises. In India, schools have to operate on a not-for-profit basis and are to be registered as a trust in order to get government recognition. This implies that the 'private' schools are not 'private' in the usual sense that the term is used. There are several justifications given for enforcing the not-for-profit obligation on private schools.

1. *Nature of education*: It is argued that education is a basic necessity and providing it is a service to the society. Hence such activity cannot be commercialised and be linked with money or greed. There are several issues with this argument.

One, if education is defined as imparting knowledge to children and should not be commercialised then the same should apply to private tuition centres and other enablers of education and education services too. There are many companies providing education services to schools, which are also a core part of the education process, but are being run on a for-profit basis. If such services can run commercially, why not schools?

Two, one can argue that there are more basic necessities for survival of human beings other than education like food, water, and even air which are being sold by for-profit enterprises.

The argument that intrinsic motivation alone should matter relies on hypothetical extremes to solve the huge problem of need for education. In each sector, there will be people working out of intrinsic motivation and some working professionally for the sake of money. The reasons should not matter, as long as they are delivering outcomes.

2. *Private schools are no better than government schools and are no panacea*: It is argued that private schools, especially low-cost private schools, are not any better than public schools.

Low-cost private schools may or may not be more effective than government ones, but the nature of their operation cannot be linked with their existence. There is no reason to allow a school, which is as bad as a for-profit private school, just because it is being operated on a non-profit basis.

3. *Private schools will loot parents*: It is argued that if private schools are on for-profit basis, they will loot parents charging humongous amounts. The existing fee structures of some schools are cited as evidence.

This might not be entirely true. It can also be argued that their not-for-profit nature may be the major reason behind the high fees charged by those schools. The not-for-profit nature and the norms on infrastructure raise the bar for entry to set up a school. Practically, only people with ready cash can invest and build a school as of now. This keeps out others who might be interested, reducing the number of quality schools, and stifling competition. This lack of choice decreases the bargaining power of parents and hence they are forced to yield to high fees. Lower competition also affects teachers adversely. Less number of schools implies that teachers lack the power to bargain with school managements and hence are sometimes underpaid and/or undervalued.

4. *Allowing for-profit private schools is equivalent to evading government responsibility towards school education*: This argument assumes that allowing for-profit private schools is equivalent to closing down all government schools and the government standing aloof from all related matters. The government can do its part—but if outcomes are of interest, it should also not prevent certain entities from contributing, especially those preferred by parents, as long as they are adhering to certain minimum standards.

5. *Private schools follow corrupt practices*: It is argued that the managements of private schools are corrupt and hence they should not be encouraged to operate.

Those violating laws should surely be dealt with as per the law, but one of the main reasons behind these corrupt practices can also be the unrealistic nature of rules and regulations. If schools are not allowed to be for-profit

and there are unreasonable norms for recognition, it may force people to circumvent them and resort to corrupt practices

While these are the counter arguments for the justifications cited to keep education as 'not-for-profit', there is a case for allowing schools to be run on a for-profit basis. We noted that a significant proportion of students in India are attending private schools and that the trend is increasing with time. One way to help these students and their parents is to ensure that they have healthy choices and bargaining power. Removing the 'not-for-profit' obligation will remove a hurdle in setting up of schools. This may allow more entrepreneurs to enter this space, thereby increasing competition and choice to parents/students.

The other important reason is that education as a sector desperately needs innovation and variety, as has been noted in our discussion regarding pedagogy. It is unwise to rely only on government schools to make this happen. Allowing such private schools might contribute to the pool of innovation. Even now many small entrepreneurs are starting schools but the effect is only marginal. Legalising for-profit education will enable professional and high quality people to set up schools and promote innovation. We must also not forget that allowing for-profit private schools may not be the remedy for all our problems and that all for-profit private schools may not be of good quality. As in any other industry, there may be a mixture of good and poor schools.

**Public vs. Private**

At this stage, it is useful to reflect on the debates of public vs. private systems of schooling. They are often viewed as either-or systems. Differences in opinion seem to be fundamentally about relying on only one of them as means to improving education. Proponents of private schools cite the failure of public schools and increasing enrollments in private schools as reasons to rely on private schools, while sceptics argue that most successful countries across the world have improved their education standards through public systems and hence private systems should not be relied upon in India.

While it is true that most countries have relied on public school systems and continue to do so, we should consider the Indian context while inferring from experience of these countries. The question is not just—what is the solution? It is rather—considering where we are now, what is the best possible solution? Education systems of countries have followed different trajectories. Some countries have relied on public systems since beginning and have managed to make them work and hence have very less dependence on private systems. Currently, India is at a position where there are significant number of children in both public and private schools and our system is dependent on both. It may thus be unwise to rely on only one path and dismiss others at this stage. We should not have stigma towards either of these. Countries with strong public systems can afford to have restrictions on private schools because people there have a competitive alternate option in the form of strong public systems. In the absence of such strong public systems, we cannot afford to put restrictions on private schools.

As discussed earlier, the eighth component of state capacity, environment in which policy is implemented should also be considered as a factor in the debate on public vs. private. Indian context is unique and brings in the challenges of scale and diversity, which must be acknowledged. It is possible that even if the public machinery of successful countries is imported to India, they may end up not being effective in our context. Additionally, education is sensitive to geographic vicinity. It means that it is not enough to have a few good public schools in a town or city. We need to ensure good schools in each and every neighbourhood. Even if we reach a stage where we can call public systems are being effective, it necessarily need not mean that each and every public school is good. Additionally, preferences on type of education also differ.

In such contexts, relying on only one form either public or private may not be wise. We need a combination of both to effectively address the challenge.

We must also understand that setting up a good school and delivering education costs a lot. If all the revenue has to be recovered from students

then the fee is bound to be high. In the absence of good public schools, aspiring parents are bound to spend such huge amounts to get education, which causes significant financial burden. If they cannot afford high costs, they may end up sending their children to schools, which charge low fee and whose quality is questionable in comparison to top schools. In the absence of good public schools and with limited ability to incur costs, we are only forcing parents to choose the second best options which may only have marginal benefits. A long-term solution towards increasing quality in education and helping them can be to strengthen public systems. We are investing a lot on public schools and teachers, and it would be best to get returns from it. In this context, strengthening state capacity can also be seen as enhancing choice for parents, to choose a good quality cost-free education.

At the same time, we should remember that private schools are serving as an alternative in the absence of good public schools. They also provide variety that public schools typically may not. If we just restrict the growth of private schools, without improving public schools, we are only hurting parents and the education sector. It benefits none. Due to the weak public systems, we are already burdening parents by compelling them to spend huge sums of money (in proportion to their income) on their children's education. If we cannot improve public systems in the short term, the least we can do is ensure that poor parents have healthier choices to choose from and get better returns for their hard earned money. Remember, for a parent who spends hard earned money, it does not matter whether the school is for-profit or not-for-profit as long as it provides good quality education. What is wrong if a for-profit private school provides better education than a not-for-profit private school? We should be concerned about outcomes and value for parents rather than our intrinsic biases

## School vouchers

The perceived failure of public systems resulted in demands for alternative forms of delivering education. School vouchers is one such prominent idea. In the traditional public education system, the government funds the schools; it sets up schools, recruits teachers, provides necessary infrastructure, and looks after all other related aspects. Parents send their children to these government schools free of cost. The idea behind the voucher system is to fund the students directly and not schools. Instead of funding schools, the government could give that money to students in the form of a voucher, who would then use it to study in a school of their choice.

The primary argument in support of vouchers is that they give more choice and voice to parents. Today, poor parents who cannot afford private education have to send their children to a government school irrespective of its quality. If students get vouchers, parents would then be able to choose a better school. This would also increase the bargaining power of parents because they now would have the option to change schools if the quality is not satisfactory. This bargaining power is traditionally absent in the case of government schools because parents cannot change schools and teachers do not get affected if some children leave. Further, the voucher system can induce competition among private schools to enroll students (who are potential clients), thereby putting them under pressure to perform. This can also indirectly pressurise public schools to improve themselves in order to retain students.

However, several concerns are also expressed regarding the idea of vouchers.

*Vouchers help private individuals prosper*: Opponents of the voucher scheme question the rationale behind investing money in private schools. Some argue that it would be equivalent to helping private people to earn profits. The proponents of the voucher scheme argue that money is not being given away for free to private individuals. The money which would have otherwise been spent on students is still being given to them in order to help them avail better educational opportunities.

*Vouchers are no panacea*: Opponents of the voucher scheme argue that vouchers are not a panacea for the ills of our school education system. Elsewhere in the world, the public education system has always played a role. Proponents of the scheme argue that vouchers need not be a panacea but just one of the prospective approaches to better systems.

*Providing vouchers is equivalent to evading responsibility:* Voucher system opponents argue that government schools should be improved to help the poor and that using other approaches amounts to evading responsibility. The proponents argue that there is a difference between public provision of goods and public funding of goods. The government's job is to ensure outcomes; it can do it either through public provision (government schools) or public funding (the government funds but others provide services). The government can help ensure outcomes even if it does not directly provide the goods.

Proponents also argue that parents primarily decide whether their children are receiving good education and their choice should be respected. Satisfying parents is the other form of performing the government's duty. The voucher system is thus not evading responsibility but actually being more responsible by giving a chance to parents to choose to their satisfaction rather than deciding for them.

**Concerns about the negative effects of vouchers**

*Private schools will become a monopoly and kill government schools*: Opponents of the voucher system argue that there will be a mass exodus of students from government schools to private schools, leaving government schools empty. This will kill all government schools in the long run, thereby making private schools the dominant players. Proponents of the voucher system argue that if mass exodus does happen, it will reflect the quality of public schools from the perspective of parents. The argument of mass exodus acknowledges the failure of public schools, and hence it is not right to force students to stay in public schools for the sake of protecting these schools. It is argued that our primary responsibility should be towards children and not schools; if parents are satisfied at the end of the day, should other aspects matter?

In this context, it is instructional to look at data on the public vs. private share in voucher systems (Table 7.1).

**Table 7.1: Enrollments in some countries with voucher systems**

| Country | Years in operation | Enrollments in private or independent voucher-funded schools (%) |
|---|---|---|
| Chile | 1981- | 47 |
| Denmark | 1855- | 12 |
| Holland | 1917- | 70 |
| New Zealand | 1989- | 15 |
| Sweden | Early 1990s- | 10 |

Source: Epple (2015).[126]

We observe from Table 7.1 that the share of private funded schools differs across countries, ranging from 10% in Sweden to 70% in Holland. In India, Delhi-based think tank, Centre for Civil Society piloted the school voucher system in 68 wards in the city. It advertised for 480 vouchers, each costing Rs.3,600 per year, to be chosen through lottery. As many as 1.2 lakh parents applied for the vouchers for 480 vouchers.[127] The varied experiences suggest that the extent of transfer varies is contextual and can depend on the quality of public schools, availability of private schools, and other factors.

*Social stratification*: Opponents argue that voucher schemes lead to social stratification in schools—the rich attending schools of one type and the poor attending schools of other type. It is also argued that such stratification can limit the gains of peer effects (interaction between better-off children and others). Proponents argue that social stratification anyway exists today, even without vouchers, with the poor opting for government schools and the rich opting for private schools. Hence it is not a new concern, if at all it is one. They also argue that even if there is stratification, vouchers at least ensure minimum ability to spend as opposed to the status quo.

Evidence from Chile suggests that middle-class exodus from public schools was part of the private sector growth.[128] Chile has the highest levels of school-level stratification by socioeconomic status in OECD countries.[129] Evidence from Sweden suggests that the effect of choice on segregation is relatively low.[130] This suggests that the design of vouchers and context determine the extent of stratification. In the Indian context, RTE 2009 mandates reservation of 25% of seats to children of Economically Weaker Sections (EWS), thus capping the possibility of extreme stratification.

**Concerns about possible constraints**

*Vouchers cannot cover all geographical areas*: Sceptics argue that the voucher system may not be a possible solution for all contexts, especially rural areas. Proponents of the system argue that there are low-cost schools even in rural areas today. Even where there are none, the vouchers would introduce an incentive for local residents to build a school, since the money is ensured. Students can always attend government schools in the absence of a private school, which is equivalent to the status quo. It is also argued that vouchers may not be feasible in all geographical contexts, but at least they should be allowed to function wherever they can, as decided by the market. Non-feasibility in certain contexts cannot be a reason to stop the voucher system from operating in areas where it can.

If non-availability in some situations is a serious problem then schools gaining voucher students above a certain number can be asked to set up schools in these villages, and other possible solutions can be found out.

*Parents lack information about schools and learning, so they cannot choose*: Sceptics and opponents argue that there are information asymmetries in education and that parents cannot differentiate between good and bad schools. This might lead to bad choices and also exploitation. Proponents argue that the definition of good and bad and associated preferences is subjective and best judged by parents. If there are information asymmetries that can possibly lead to exploitation, then the solution is to provide information to parents rather than denying vouchers. It is argued that there are

information asymmetries in many other sectors, too and the government's role is to provide information and ensure certifications, not to hinder.

Evidence can help us understand these claims better:

A survey conducted as part of an evaluation in Uttar Pradesh found that "67% of the parents of the children who could read nothing thought they could at least read letters, and 38% of the parents of the children who could barely decipher letters thought their children could read and understand a story. The picture is even more distorted in math, where a full 83% of the parents of the children who could only recognise numbers, but could neither subtract or divide, believed that their children could perform subtraction problems".[131]

In a survey conducted in Tanzania, "more than 80% of surveyed adults suggested that the government was meeting the country's educational needs fairly well or very well". Two years after the survey, nationwide tests by a civil society group Uwezo suggested that less than a third of children in Class 4 passed Class 2 level tests of literacy and numeracy.[132]

Evidence from Pakistan suggests that the "most relevant determinants of parents' choices among different schools are price, distance and basic infrastructure".[133]

In another survey conducted in Pakistan, researchers found that scores of children were in high correlation with households' perception of school performance.[134]

These pieces of evidence suggest that there is a gap between parents' perceptions and reality. If that is so and if parents cannot accurately judge, why are they shifting their children to private schools? Possibly, parents cannot accurately say if their children know addition or division but they can differentiate the quality on a macro level. The high correlation between performance of schools and their beliefs in Pakistan survey also suggests this. The decisions are possibly taken by collecting information from peers. A study of low-cost private schools in Hyderabad observes that, "when asked how many other schools the parents had investigated before they

chose the present school for their child, no parent reported that they had not considered any other school. Indeed, 69% had investigated between two and seven other schools"[135]suggesting that parents do take enough care while making school choices.

*Schools may spend all money on infrastructure and not invest in learning*: Sceptics and opponents argue that schools may end up spending money on infrastructure, decoration and so on, making it look attractive to parents, but not invest in aspects related to learning. It is a concern since such investments can easily mislead parents without improving learning outcomes. Proponents argue that the demand for quality from parents would restrain the temptation to spend on other measures, just as in other sectors where companies are restricted from spending all their profits on marketing without improving the quality.

An interesting experiment was undertaken in Pakistan to see what happens if schools get grants.[136] In one group of villages, grant was given only to one school in a village and in the other group, grants were given to all schools; the third group which served as a control group received no grant. After one year, it was found that the schools in first group, where only one school in each village received money, the enrollments increased and thus the revenue too, but with no improvement in learning outcomes. In the second group of villages, where all schools in the village received grants, there was not much change in enrollments but the gain in learning outcomes was significant. This suggests that if schools have money and if there is competition, they have the capability to improve. By contrast, lack of competition can lead to investments but not necessarily to outcomes. This strongly suggests the need for an ecosystem ensuring fair competition.

**Concerns regarding feasibility of implementation**

*If the government cannot run public schools, how can it manage private schools*: Sceptics argue that if government cannot run public schools, how can we guarantee it can monitor private schools? Proponents argue that skills and capability required for the two are different and the inability to run government schools is not equivalent to an inability to manage or regulate private schools. A

more appropriate question to ask is—what can the government do better—running public schools or managing private ones?

*Private schools can collude with governments or not listen to them*: It is argued that private schools of powerful businessmen can collude with governments and violate rules, and not listen to them when necessary. Proponents argue that this is a concern in every sector and the solution is to demand better transparency and norms rather than rejecting the idea altogether.

**Evidence on voucher systems**

We noted that there are several arguments regarding vouchers and opponents and proponents have justifications of their own. It may thus help to understand evidence on effects of vouchers from where they were implemented.

Voucher systems across can be categorised into two forms—large-scale and small-scale. Large-scale programmes are often run by governments, which cover all aspects of the vouchers. The small-scale ones are either limited to a certain set of people or experiments run by researchers to understand specific issues of vouchers. Each of these programmes can help us understand different aspects of the voucher system. Vouchers as an idea needs certain dynamics—competition, schools and parents responding to prices, time to deliver results, and so on. We can thus learn the macro level aspects from large-scale programmes. Small-scale programmes, especially experiments, help us understand and validate specific hypotheses and arguments regarding the voucher system.

Voucher systems are also generally judged based on two types of metrics. The first metric is the ability of voucher systems to improve the system as a whole. This would be equivalent to improving the PISA rankings. The second metric is to compare the outcomes of students who received vouchers and those who did not. This would only limit the analysis to the students who got vouchers and not the complete system.

With this background, let us explore some voucher programmes across the world. It may not be feasible to discuss all the voucher experiments across the world and hence let us discuss some prominent ones.

Colombia launched a large-scale voucher programme in 1991 called PACES. The vouchers were targeted at children of low-income communities for students entering Class 6 and they were renewed subject to academic performance. It was found that after three years of the programme, the winners of voucher lotteries scored higher on achievement tests compared to those who did not win the vouchers through the lottery.[137]

In the case of Chile, initial evidence suggests that choice did not improve average educational outcomes in the 150 municipalities that were analysed.[138] Even looking at the aggregate measures, PISA rankings, Chile stands at 51st place, though the voucher scheme was introduced way back in the 1980s and measures were taken to ease the entry of private schools. Interestingly, there was a dramatic increase in Chile's PISA test scores between 2003 and 2011. Evidence suggests that this may be due to a 2008 reform in the country, which increased the voucher amount to the poorest 40% by about 40%.[139]

There are similar debates in Sweden on the effect of voucher programmes after its PISA rankings declined from seventh to twenty-third. The PISA report says: "No other PISA participating country saw a steeper decline in student performance over the past decade than Sweden." Sceptics argue that it is due to the voucher system; proponents argue that private schooling constitutes only 15% of enrollments in Sweden, and hence the voucher system is not at fault.

In India, Karthik Muralidharan and Venkatesh Sundararaman conducted an experiment in Andhra Pradesh to explore the effects of the voucher scheme.[140] It was conducted in 180 villages spanning five districts, where parents were invited to apply for vouchers and were then given vouchers based on a lottery. The voucher was priced at the 90th percentile of the fee of private schools in these villages. The scores of vouchers beneficiaries and others were analysed after two and four years.

The study found that there was no difference of test scores between voucher winners (students who attended low-cost private schools using vouchers) and those who did not win the voucher, in Math and Telugu (mother tongue). There was a small positive difference in English and Social Studies, and a large difference in Hindi. It also found that private schools spent significantly less instructional time on Telugu and Math than public schools (40% less in Telugu and 32% less in math) and spent more time on English, science and social studies. The mean per student cost in the private schools was one-third the student cost in the public school system.

Sceptics and opponents of vouchers point to the scores in Math and Telugu as proof that private schools are no better at handling typical students who attend government schools. Proponents of vouchers point out that private schools achieved the same results as those of government schools in Math and Telugu by spending less time, teaching English (small gains) and Hindi (large gains) additionally and at one-third the cost of a government school, making private schools more productive. It is also argued that difference in emphasis on subjects as measured by the time spent on them reflects parents' preferences.

One should note that the cost of a voucher is at the 90$^{th}$ percentile of price distribution of private school fee in these villages. The effects might change if this price is increased as schools get more money to invest. This experiment was conducted in a rural setting where the density of schools is less, with often only one or no school in the neighbourhood. The effects might change in contexts of higher density areas due to increased choice and competition. Additional analysis of the study finds suggestive evidence that the impact of vouchers may have been higher in markets with greater choice and competition.

There seem to be multiple experiences regarding the voucher programme. So what does the experience in general look like? A literature survey of school vouchers discusses evidence on major voucher programmes across countries and observes: "The empirical research on small-scale programmes does not suggest that awarding students a voucher is a systematically reliable way to improve educational outcomes. Nevertheless,

in some settings, or for some subgroups or outcomes, vouchers can have a substantial positive effect on those who use them. Evidence on both small-scale and large-scale programmes suggests that competition induced by vouchers leads public schools to improve." [141]

Overall, the mixed experiences discussed so far illustrate certain limitations of the voucher system. What do we make of this evidence? The contexts in which voucher systems will be successful, the prerequisites and the mechanisms through which vouchers can be effective are yet to be fully understood and are subject to future research, but there are some broad general lessons.

*Design of voucher programmes matters*: School vouchers is a broad theme; two programmes can both be using vouchers but the rules of operation can result in widely different outcomes. The first such difference can be due to the value of the voucher. There is a difference between giving a voucher equivalent to the money being spent on students in public schools (which tends to be higher) and giving a voucher to cover minimal costs. Merely increasing the value of this voucher can affect the outcomes, as the evidence from Chile's reforms in 2008 suggest. The second difference can be due to the conditions for renewal of voucher. Some argue that the programme was successful in Colombia because the continuation in the voucher programme was subject to the children's performance.

*Restrictions on private schools*: Choice and competition are the backbone of voucher systems. If the barriers to set up and operate private schools are high, such as the norms on infrastructure and not allowing for-profit schools, it restricts some people from entering the market and stifles the competition.

External factors of credit constraints and labour market constraints can also determine the competition between schools and thus the outcomes. We discussed an experiment in Pakistan where, if only one school receives a grant in the village, it spends that money on infrastructure improvements, thereby increasing enrollments. If spending this money would lead to increased enrollments, schools would have done so before the grant, but for

credit constraints. In countries like India, land can also become a constraint, since building a good school requires a significant amount of land.

*System's expectation from schools and students*: Information asymmetries in education is not just about parents' ability to gauge the learning levels of their children, but also about the absolute learning level towards which stakeholders in the system aspire. The expectations of the system from schools are reflected by the end of school examinations and other assessments. It is possible that all students shift to private schools, and all private schools do better than government schools, but on an absolute level that might just be at much lower levels than those we aspire for. In the Kenyan study on teacher incentives discussed earlier, we noted that schools trained students only for the exam based on which incentives were given, but the same students performed poorly on an independently administered test. It suggests that if the test, which the stakeholders care about, is of poor quality, the corresponding preparation would suffer.

PISA rankings and other international assessments often serve as a guide towards such absolute standards, but the government should also ensure that they have expectations from schools too, not necessarily by making all of them participate in PISA but through other means like enhancing the quality of board examinations. If these expectations are low, then all schools can stabilise themselves in a low equilibrium, even amid competition.

*Information provision*: Providing information on quality of schools can help bridge information asymmetries.

*Support structures*: Support structures can range from consultancies on managing the school to training teachers, curriculum design, assessments, and so on. There can be problems due to both lack of services and lack of information about these services to schools. In the experiment in Pakistan discussed earlier, many schools spent on infrastructure but not on curriculum design and other essentials, and argued that other services are too expensive. In a follow up experiment, when both schools and service providers were brought together in the form of a fair, providers

and schools learned from each other and providers started offering customised packages to schools, and so on. The market may take care of these in the long term, but it is possible these deficiencies also exist.

Possibly, we can also learn some lessons from similar contexts in healthcare. Generally, economics of education and healthcare are perceived to be different from others because of informational asymmetries (provider has more knowledge than the consumer), high transaction costs (it is not easy to switch services the way we change restaurants), dependence on geographical vicinity etc. Experiments in healthcare involving choice and competition can help thus us understand this phenomenon better.

Britain enacted a policy in 2000, which enabled people to avail free treatment services with a choice to choose from at least five hospitals in their vicinity. Costs of services were fixed and the resources to public hospitals were allocated based on the number of patients attending those hospitals making them dependent on attracting patients for resources. Since the costs were fixed, the only way to attract patients was to improve quality. Evidence suggests that hospitals that faced more competition had higher clinical and financial performance. Adding a rival hospital increased management quality and increased survival rates from emergency heart attacks.[142] Thus, despite informational asymmetries and other issues specific to health and education, choice and competition improved performance of hospitals.

Results from this experience may not be directly transferable to education because the cost of services was fixed in this case which may not be feasible to do in education due to the possibility of variety in services and so on, but it suggests that designing policies enhancing choice and competition appropriately can increase performance even in contexts with possibilities of market failure.

**Should we consider vouchers in India?**

The discussion so far suggests that the evidence on vouchers is mixed and that there are many prerequisites determining its success. After considering

all these, there are some strong reasons for India to consider the voucher policy.

The first reason is the rights of children (and parents). There has been a gradual shift from public schools to private schools in recent years, and a sizeable section in this shift belongs to low-income communities. These students would have got government support in the form of spending on schools, had they studied in public schools. If education is the right of children, then why is the right to get support denied when they join private schools? We are not talking about high-income elite school students; we are only talking about students from low-income communities here. Right to Education should not just be limited to 'Right to Public School Education'; it should be right to education anywhere, and the government should support them regardless of the schools they choose to go, if it genuinely believes that education is these children's right.

The second reason is to enable groups which benefit from vouchers to avail the opportunity. We need to rephrase the framework of debate on the impact of vouchers. As discussed earlier, the impact of vouchers can be debated on two fronts—their ability to improve the system as a whole (this would be equivalent to bringing up the PISA rankings), and the ability to benefit those availing the vouchers or certain subgroups. In the general discourse on vouchers, they are judged on their ability to improve the system as a whole, as a substitute to government systems. If global experience is any indicator, this may not be as straightforward and easy as it seems, but evidence also suggests, as noted earlier, that vouchers substantially help certain subgroups in certain contexts. For instance, evidence from the US suggests that educationally disadvantaged groups gain the most from school choice programmes.[143]Similarly, it can be useful in urban areas with dense network of private schools. Instead of looking at the voucher programme as a substitute to public schools and with expectations of improving the system, we should look at it from the perspective of benefiting certain subgroups and geographical contexts where they can yield results. We should let such subgroups and students of such geographic contexts, who can gain from vouchers to avail those benefits.

The third reason is to ease financial constraints of the poor.

'The cook who runs marathons', a video biography documents life story of a cook, Gouranga Dey, who runs marathons.[144] Though the documentary is about his life and prominently about his passion for running, some elements of his life capture the struggles of parents to educate their children. Gouranga Dey was born into a poor family and often did not have food to eat. So he went and requested work in a student hostel while he was still a child, so that he would not burden his father. He grew up among these struggles and became a cook but he realised the value of education and his lost opportunity. A teary eyed Gouranga Dey narrates that he wanted to ensure the best possible education for his children and hence admitted them in a private school. It meant a significant financial burden considering his income. He had to work two shifts a day to earn enough money to pay the school fee. He used to work as a cook at the hostel during the day and used to supply milk and coffee to boarding students in the night, sacrificing his sleep. Sometimes, he would still fall short of money, which would then be financed by some generous students of the hostel he was working in. What is all this hardship for? To pay the school fees of his children.

There are many such stories and many people are making enormous sacrifices to send their students to private schools with the hope of getting a better education. All this is because of failure of public school system which should have given quality education for free to his children. It can be argued that improving those public systems can address such issues. But should Gouranga Dey wait till it happens and sacrifice his dreams? Even if we cannot improve public systems immediately, one way to help such parents is to ease their financial constraints by providing assistance through vouchers. After all, this money would have been spent on these children, had they been in government schools.

It is argued that difference in performance between low-cost private schools and public schools is due to the difference in the type of students attending these schools and not because of school quality as such and

hence low-cost private schools may not be effective in handling students that attend public schools. We need to note that we are discussing about two different sets of students here, those attending public schools currently and those currently attending private schools. Vouchers can ease financial constraints of those attending private schools. For those attending public schools, while the above inference of school quality is subject to some caveats, even if it is true, we must note that there is a wide range of private schools starting from elite private schools to low-cost private schools. These results may only be true for certain low-cost private schools. Providing vouchers of higher value so that students can attend better schools can address this issue.

The fourth reason is that good NGOs and schools also benefit from it. Even some good schools run by NGOs known for their innovative pedagogies and catering to students of low-income communities are being forced to close due to lack of funds. Vouchers for students of these schools could have eased the burden of these schools, and helped them sustain, which is in the interest of the students.

The fifth reason is that vouchers can improve both public schools and low-cost private schools. We noted earlier that global experience suggests that competition induced through vouchers can improve public schools. We also discussed the case of a health care policy in Britain where choice and competition improved public hospitals.

The voucher experiment conducted in rural Andhra Pradesh discussed earlier finds suggestive evidence that voucher winners do significantly better when they have six or more schools within a one kilometre radius of where they live. Urban areas tend to have more number of schools than these. James Tooley describes his experience of visiting Hyderabad in his book 'The Beautiful Tree':

> "As we travelled through the middle-class suburbs, I was stuck by the ubiquity of private schools. Their signboards were on every street corner, some on fine specially constructed school buildings, but others grandly posted above shops and offices."

In another survey of private schools in Patna, Tooley and co-authors find that there are between 9 to 93 private schools within one kilometre radius of every public school, with the median being greater than 50.[145] One may question, if competition improves performance then do we see its effects in these contexts which have similar or more competition?

One of the issues in such contexts can be that such schools are cash starved. In a survey of low-cost private schools conducted in Hyderabad, Tooley and Dixon find that average surplus of a low-cost private school is Rs.2,41,000 per year.[146] It is profitable income but not enough to be able to make investments on teacher training or pedagogy. In the same survey, Tooley and Dixon find that staff training and welfare constitute only 1% of the expenditure and even the top schools spend 3% on welfare and zero on training.

In such contexts, additional money through voucher students and increase in revenue due to existing students (if voucher amount is greater than current school fee) can add to the surplus which can then enable these schools to make investments on quality enhancement. We earlier discussed experiments in Pakistan demonstrating credit constraints in low-cost private schools and where schools improved the performance when all of them received money, inform of additional grants in that context.

All these make a strong case for financing education at least partly through the voucher system. However, there are certain prerequisites that are to be considered in the Indian context in addition to those already discussed, so that the voucher system becomes effective.

One, ease regulations on private schools. Competition between schools is one of the core assumptions behind the working of a voucher system. Any rules that stifle competition may prevent the realisation of benefits of vouchers. Today, private schools face stringent regulations which stifle competition. The process to establish a private school is heavily regulated.[147] For instance, one needs to submit 28 documents/certificates across six departments in Delhi and 20 documents/certificates have to be furnished across five different government departments in Gujarat. [148] Some states

have laws requiring private schools to pay their teachers equivalent to the salaries of public school teachers. It is practically impossible for low-cost private schools to pay such high amounts. It is estimated that small private schools will have to increase their fee by up to four times to comply with the RTE norms.[149] These have to be reconsidered to lower the entry barriers, making it easier to run private schools so as to enhance competition.

Two, autonomy to public schools. The system as a whole improves amid healthy competition between public and private schools. While private schools are autonomous and can respond to the demands of parents, public schools often do not, which leads to an unequal ground. If one has to earn trust and let public schools genuinely improve through healthy competition, they should have the autonomy to do the same.

Three, credible and regular quality assessments. Apart from the benefits of setting expectations from the system and as a tool for monitoring, regular assessments also serve as a guiding light for reform. Reforms like school vouchers need political capital to navigate through numerous hurdles. Implementation is also going to take up energy and resources of the government. All these efforts might give us a false sense of achievement that we are working hard on reforming education. But what if it turns out that we did not benefit from this measure? How to ensure that we do not become complacent? Regular tracking will ensure that we are not carried away by the extent of our efforts, but remain focused on the outcomes.

## Way forward

While there is a rationale for considering vouchers, there are certain hurdles in making it a reality.

First, the political economy associated with the voucher programme. Teacher unions are strong and have considerable say in policy matters pertaining to them. Some of them may feel that the voucher system is a threat to public education system and hence their jobs will be in trouble, leading to resistance.

Second, the additional costs involved in implementing voucher programmes. One may argue that the money which would have been spent on students if they were in public schools should be given to them as vouchers, but it may not be possible in reality. We earlier noted that teacher salaries constitute 60-80% of the costs involved in school education which are not adjustable owing to permanent tenure of teachers and hence these costs cannot be cut and equivalent money be given to students. If one has to implement a voucher programme in the current context, it has to be through additional costs which many finance constrained governments may find it difficult to do.

Third, fear of the unknown and scepticism about implementation structures. The voucher as an idea is not prevalent yet in India and hence there is a fear of uncertainty. A policymaker is always worried about the risks of implementing a policy and because if once implemented, it may be difficult to retract vouchers, they are extra cautious about it.

There is also scepticism about the feasibility of implementing vouchers, the process involved and so on, especially in the light of the fact that many private schools are complaining about non-receipt of reimbursements regarding the 25% EWS quota students in their schools, mandated as per the RTE Act.

Fourth, difficulty in reproducing the effects of vouchers. Arguments for a new policy idea, especially to convince sceptics, can be made by building evidence around the effectiveness of the idea. In case of vouchers

too, researchers can generate evidence through experiments to test the hypotheses of vouchers so as to inform policy but the constraint with vouchers is that their success depends on too many factors and spill overs. It is often not possible to replicate all of these in experiment settings to be able to convince sceptics within reasonable time frame.

In view of all these hurdles, one may have to go for second-best options.

One, demand autonomy for public schools. There are strong stand-alone reasons for autonomy to public schools, discussed earlier, but this could also possibly ease the path towards vouchers because it might lessen the feelings of helplessness and powerlessness to compete among public servants.

Two, vouchers for after-school support systems. There are again strong stand-alone reasons for after-school support systems as discussed earlier. The advantage of this context is that vouchers to support systems pose no possible threat to public schools and hence one can expect lower the resistance due to political economy. These vouchers can also help validate some of the exaggerations and scepticism regarding the vouchers. They can also help the government fine-tune the structures of implementation of vouchers.

Three, train teachers of low-cost private schools. In the absence of vouchers, the second-best way to help students in low-income private schools is to improve the quality of teaching processes through teacher training. We noted that schools may not find it feasible to train teachers due to financial constraints. It can also be out of fear that they might leave for other schools when out of pocket investments are made out of the meagre surpluses. Since helping these schools to get revenues directly through voucher students may not be possible, one can indirectly assure the same by providing training opportunities to these teachers either in the form of skill vouchers, which can be used at teacher training centres or private companies that offer such trainings, or some other form. We earlier discussed a similar initiative in Pakistan where bringing together schools and education service providers led to adoption of these services

and companies customising their products to needs of low-cost private schools. One can also explore possibilities of elite private schools assisting teachers of low-cost private schools by accepting skill vouchers. For this, the legal nature of schools may have to be changed in order to enable them charge money for such trainings and earn profit. All these can improve the quality of low-cost private schools thereby helping students.

Four, ensure implementation of 25% reservation in private schools for students of economically weaker sections, as mandated by the Right to Education Act. RTE mandates private schools to reserve 25% of their seats to students of economically weaker sections whose fee is refunded by the government. This approach may not have all principles of a voucher programme but in the absence of a full-fledged voucher programme, it can be used to help at least some students avail the opportunity of private education without financial burden.

The first step can be towards ensuring that the administrative processes related to the implementation of this policy are smoothened. Currently, in some places, rules for implementing this policy are not yet framed. There are shortcomings in communicating this information with parents and timely reimbursement of fee to schools.

The second step can be to ease certain existing policy constraints to ensure more choice to parents. For instance, section 12 (1) (c) of RTE mandates 25% reservation but only to students 'in the neighbourhood', which is again narrowly defined. The neighbourhood clause can be removed to address the demand-supply mismatches and ensure more choice to parents.

# 8

# MILES TO GO

## Why is reform difficult in education?

Progress of reform in school education seems slow, compared to its importance and urgency. A person concerned about education hence often wonders, why isn't there any public outrage over the poor state of education; why is the change not happening? Is it because we do not recognise and understand the issues? Is it because we do not know the solutions yet? Or does the cause lie elsewhere?

The relationship between people and government is that of a balancing act where the pressure of demands from public have to be in balance with the efforts and delivery from government. Based on the extent of pressure from either side, we can categorise the situation into three states.

*Inert systems*: The inert system describes a stage where there is little or no pressure from both ends. It can be either because there is no effort from either side, or because people do not know how to pressurise the government, or because people have lost hope about change. For instance,

the issue of corruption was at an inert stage before the Anna Hazare movement, when people considered it to be part of their lives.

*Volcanic systems*: The volcanic system is a stage where the issue starts troubling people and they visibly notice it. Burdened by the problem, they aspire for reform, but there is lack of action from the government. At this stage, there is building up of excessive pressure from one side. It may not be visible but if neglected it may burst due to the built up pressure. Considering the same case of corruption, it reached the volcanic stage just before the Anna movement, with the tolerance for corruption tipping over.

*Agitated systems*: The agitated system is a stage where the government is in continuous engagement with people, addressing issues on priority. At this stage, demands of pressure from one side are effectively addressed by the other side ensuring a fine balance. Issues that remain continuously in agitated state are those which have visible impact on daily life like the price of onions, food inflation, and interest rates. These issues invite immediate protests from people and also draw the government's attention.

At any given point of time, all problems can be placed in one of the three categories. Similarly, a given issue can be in one of these three stages at multiple points of time. For example, the issue of corruption was initially at an inert stage, then it transitioned to a volcanic stage during the Anna movement and then to the agitated stage when there was nationwide demand to pass the Jan Lokpal bill. It then returned to the inert state.

Analysing reform in education from this framework, one can put it in inert stage, where there is not enough pressure from either side. There can be several possible reasons behind this.

1. *Lack of visibility of crisis*: Shankar Aiyar in his book 'Accidental India' argues that some of the game-changing reforms in the country have only happened due to crises, economic reforms being the most famous. Crises provide limited alternatives and call for tough actions for survival. A crisis can thus act as an important channel of operation for the transition of an issue from inert state to volcanic, and from the volcanic to the agitated

states. If that is so, the problems in the sector should be visible enough to lead to a crisis. Mismanaging an economy would lead to deficits and inflation, creating pressures on the government. Insufficient stocks of essential commodities are reflected in prices, calling for action on decisions regarding imports and exports. Education lacks such visible forms to reflect its crisis.

2. *Lack of an anchor agenda*: The other channel of transition between the inert, volcanic and agitated states is the availability of an anchor agenda. Corruption was a widespread issue but the Jan Lokpal bill was an anchor agenda, which provided a visible concrete form around which people could be mobilised.

Education may lack such anchor agenda but when the issue is neglected for long and people are tired of it, non-conventional ideas can emerge as anchor items. For instance, in response to the lack of accountability, there is an emerging demand to mandate public officials to send their children to government schools. The judicial and feasibility aspects apart, it is hard to refute the fundamental reasoning of this proposal because of the stark contradictions existent in the system.

Consider this scenario: The accountant in an organisation who is responsible for designing algorithms for tax calculations of all the employees hires an external expert to calculate his personal tax because he does not trust the system he designed. Other people in the organisation who can afford to do so also hire external experts, but the bulk of the employees are forced to use the faulty system. How does that sound? If this goes on for long, it is natural for people to demand that the accountant to file his returns through the company's system, in the hope that he will now have to make an effort to set it right.

Similarly, when the providers of education, teachers of public schools, themselves do not send their children to the public schools and when all those who can, opt out of the system, and when the system does not seem to be improving, such demands arise. Ideally such a situation should not have arisen, but it is because of neglecting issues for prolonged periods of time.

The demand for school vouchers can turn out to be the other anchor agenda. If neglected, the discontent regarding public schools can turn into a demand for rights, manifested in the form of demand for vouchers, as the argument of "education is our right and hence give us our money, we will figure out what we want" strikes a chord and is emotionally appealing. These issues may not seem visible in normal situations, but once they break out they can be difficult to manage. It just needs an appropriate time and a person to mobilise the public.

3. *Long gestation period for reform*: Even if someone is dedicated to reforming the education system, it takes typically anywhere between 10 years to a generation for the results to be visible. This is much longer than the election cycles. This is a disincentive for political parties to prioritise education reforms over others, which seem urgent and can yield visible results quickly. A truly committed person can take up this challenge, but it holds no attraction for the average person.

Any government has limited political capital. It would ideally want to spend it in areas, which give it maximum benefit, both in terms of benefit to the public and also credit to the party. Non visibility of manifestation of a crisis and no anchor agenda which could have acted as pressures along with lack of positive incentives (long gestation period) makes education a politically less attractive priority for an average politician.

4. *Lack of clear metrics to track:* What are we supposed to achieve through reform? In the case of the economy, we talk about 7-10% GDP growth, but is there any such credible and useful benchmark which can be understood by both parents and public officials? Universal literacy was used earlier but, as we realised, it did not percolate to the desired extent.

5. *Not amenable to rules*: One of the standard procedures of reforming systems is to pick up a context, devise rules, iterate them till it works and standardise them across the board. This approach is unfortunately not suitable in the case of education due to its nature.

6. *Sensitivity of approach*: Education is a double-edged sword. If one creates strong penalty systems, it can lead to perverse incentives where teachers and students can cheat, manipulate or inflate scores, which might not result in true change. On the other hand, lack of such systems may not yield results. It is challenging to tread the middle path.

7. *Easy availability of alibis*: Alibi systems are a good proxy to measure the complexity of dysfunctional systems. Students and parents complain that teachers do not come to school and do not teach properly. Teachers complain that parents are not interested. The administration complains that teachers do not work. Teachers complain that their issues are not heard, and that they are not rewarded or recognised. The interesting aspect is that all of them can be true at some level. When everyone is at fault, then no one is at fault. In simple words, the fact that we are spending energy on analysing the reasons for slow progress is an indication of the enormity of the challenge and the extent of progress.

Thus the constraints from the supply side (government), demand side (public) and the system (complexity) can be identified as factors responsible for slow pace of reform. It is useful to understand this while preparing a framework for reform.

## Setting up the ground for reform

The discourse on school education reforms, at times, appears that the perennial debates are stuck in a comfortable yet dangerous equilibrium. Public schools are not being effective. Reforming them seems too complex and hence nothing is done on that front. Any debate on private schools immediately becomes philosophical with accusations on government shedding its responsibility. One side is sceptical about public schools and other side is sceptical about private schools, resulting in a dilemma on prioritising and pursuing reform. Any initiative to incentivise students to propel themselves is met with the criticism that students are coming under pressure; any initiative to make teachers accountable is met with criticisms of teaching to the test. In contexts of weak state capacity like ours, too much autonomy can turn out to be ineffective, but efforts to standardise certain procedures are resisted as well, on the ground that teaching students is not equivalent to producing goods in an assembly line, again maintaining the status quo. We then have perfect alibi systems. Teachers have lack of infrastructure, unmotivated students and parents as alibis. Parents have unmotivated and irregular teachers as alibis. Government has issues of scale and complexity of reform as alibis. Overall it is made to seem like everyone is at fault reminding us of the famous saying, when everyone is at fault then no one is at fault.

In these perennial debates, we neither seem to know how to fix the system, nor are we trying out new solutions. It is a sad state of pessimistic equilibrium—pessimism about the state of the education system and pessimism about the ideas, leading to excessive analysis and paralysis of action. It is as if Sir Humphrey Appleby of the famous 'Yes Minister' series[XVI] is manifested in all of us, ensuring that enough hurdles are put up to everything new so that status quo is maintained. The opportunity costs, of such low-level equilibrium/status quo situation, are high. We cannot afford it and hence have to mend the following approaches in our debates in order to be able to find a middle path:

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XVI 'Yes Minister' is a popular British comedy TV series where Sir Humphrey Appleby is a bureaucrat attached to a minister. He is known for his bureaucratic arguments and stalling everything that the minister wants to do.

One, we should appreciate the nuances of necessary conditions. We visualised issues using the education diagnostics map (Figure 3.1). At times, working only one of those issues may not yield final outcomes but it does not mean that the issue is not worth addressing. Providing infrastructure alone may not lead to outcomes but it does not mean that infrastructure should not be provided. Infrastructure is a necessary but not a sufficient condition. Often, addressing individual issues may not show results because the complementary inputs are missing and addressing multiple issues together may yield results. For instance, in an intervention in Mongolia, it was observed that providing teacher training alone did not result in outcomes, neither did providing textbooks alone, but when both training and textbooks are provided together, it yielded results.[150] We can use the results of interventions addressing individual issues for prioritising policies but one should exercise caution before discarding them completely based on these results.

Two, we need to judge initiatives by appropriate metrics. Just like being taught mathematics by a good teacher need not improve nutrition, providing nutritious food need not improve outcomes. Each of them has a specific function to perform and it would be better to judge them on the same. Learning outcomes need not be the deciding metric for all initiatives. Instead of arguing that schemes like mid-day meals do not improve outcomes and hence are not useful, one should rather ask if mid-day meals improve nutrition.

Three, we should stop looking at every initiative as helping possibly everyone. It is argued that intrinsic motivation is needed to learn through technology tools and hence cannot help every student. This often becomes an argument to dismiss technology as a possible solution. One must not forget that technology may not help non-intrinsically motivated students but at least it helps motivated ones. It should then be viewed as addressing the problem of a section of students and should be allowed to do so. We keep saying there are no silver bullets but often forget this when it comes to judging interventions. There are no silver bullets and hence we should look for variety of solutions which address the problems. This

debate is also seen whenever a new idea is proposed. When everyone is competing for space in crowded discourse, it is natural for the proponents of a new idea to enlist its benefits and advantages and strongly advocate for it. Responding to this, some start arguing that this policy idea is not a panacea. This debate then slowly takes the shape of 'it is not a panacea and hence it may not be worth paying attention to', which may result in the idea being discarded or losing the attention that it genuinely deserves. For instance, certain people strongly advocate for steps to be taken to ensure a thriving environment for private schools. Some argue that private schools is not a panacea to all the ills of our system and that especially low-cost private schools are not effective in educating students of low income communities. One must again note that private schools may not be a panacea and may not address needs of all types of students but there may exist some set of students which it can effectively deal with. It should be allowed to help these students instead of dismissing them in entirety because it is not a panacea. Its proponents may appear to be overselling them but that cannot be a reason to discard them completely.

Four, share the proof of burden. Acceptance of ideas often follow an unwritten rule—if it is my idea, I will implement it because there is no evidence against it, if it is your idea, I will not, because there is no evidence supporting it. The discourse on some ideas initially starts with claims that there is no data to support the effectiveness of the ideas. When some data, typically in form of correlations is presented, it is argued that it's a mere correlation but not causation. When causal evidence is provided, it is then argued that it applies only to a specific context but not in all or that all aspects of the idea are not covered in experiments or similar initiatives elsewhere. This often leads to an endless loop of scepticism where nothing can be effectively proved and hence is not implemented. Instead, it will be useful if the arguing parties share the proof of burden: one party showing evidence of success and the other demonstrating weaknesses in form of evidence, instead of merely demanding more evidence from the other side.

Five, acknowledge genuine negative effects and find ways of cushioning them, instead of discarding the idea altogether. Another typical response to any new idea is to comment on why it will not work and list the possible

hurdles. Proponents dismiss negative effects while sceptics create an endless list of possible hurdles, resulting in a logjam. Instead, if the idea is worth trying out, we should acknowledge the genuine concerns and think of possible ways to cushion the negative effects, instead of burying the idea. In other words, we need to do a cost-benefit analysis and not just cost analysis alone or benefit analysis alone.

Six, current state of system must be considered while considering reform paths. We earlier discussed that, in a poor-good-best continuum, strategies for reform may depend on whether we are trying to move from poor state to good state or good state to best state. Typically, strong top down measures or accountable systems and strict monitoring is required to take systems from 'poor' to 'good' state, while nurturing the intrinsic motivation is a better strategy to move from 'good' to 'best'.

This debate is often seen in case of assessments. Proponents of assessment based accountability argue that such measures are needed to address accountability issues. Others argue that the accountability based assessments lead to negative effects and the same is best achieved by nurturing intrinsic motivation, though it may take long. One must note that both arguments may be true but in different contexts.

Seven, impossible best should not become the enemy of possible good. At times, when the best solution is not feasible to achieve in the short term, one may have to go for other approaches which may help offset the negative effects. It may not be wise to dismiss such approaches in pursuit of the best. For instance, it is not incorrect to have higher goals for education, apart from ensuring basic reading and numeracy but we must realise that achieving that goal may not be possible in the short term. In such cases, approaches which at least ensure basic reading and numeracy can be embraced so that students are at least equipped with these skills. These skills are also part of the process of achieving the higher goals. While we continue to work on achieving higher goals, we should not dismiss such approaches.

Considering the above factors can hopefully resolve some deadlocks in policy negotiations and pave way for the reform.

## The Ten Commandments for reform

The process of reform is similar to sailing in troubled waters where the distinction between right and wrong is hazy. One needs to have a clear vision of the goal and have a strong sense of direction to be able to take decisions in such complex situations. Vinod Khosla, co-founder of Sun Microsystems and a famous venture capitalist, calls this as internal compass and says leadership is about having an internal compass.[151] Having an essential compass can help us prioritise and act as thumb rules for distinguishing between right and wrong, else one might just succumb to outside pressure and do what is being asked for, instead of doing what is needed. It is useful to build such compass before moving to preparing a framework for reform. The following can be such internal compass for a decision-maker in school education.

One, learning is the end goal: One must be clear that learning outcomes are the primary end goal. Everything else should be seen as part of the process of achieving this goal. It is easy for us to mistake efforts for results, activity for progress, and thus become complacent. If we do not focus on it, we will end up doing many things but with little effect on learning outcomes.

It may look obvious but it is not so. One can realise this by asking people about what they consider is the critical problem in education today. In most cases, one receives responses around—poor teacher training, bureaucracy, lack of political will—all of which may be true, but rarely does one receive a response of, 'our children are not learning' which is the core issue. It may not be the case that the respondents do not recognise poor learning outcomes as the problem. They may recognise it but often it does not surface as visibly as it should.

A related aspect is the fear of failure or the bad press associated with realising that a state is in the "poor state." The first step towards addressing any problem is recognising it. One should not feel ashamed of the poor state, instead one should acknowledge it and see it as a challenge.

Two, acknowledge that weak governance capacity is the critical constraint at present, in our public school education. If we do not, we will be easily misled by other visible but superficial issues.

Three, change in education is a long-term reform. It might take at least the next 10 years, even if we get everything right. We should act accordingly and not expect to see results in the short term.

Four, follow a comprehensive approach to reform. Education reform has several aspects involved with it, the economics of education, governance issues, pedagogy, philosophy of education, political economy etc. The reform initiatives should be spread across all the above to be able to see a comprehensive change. Similarly, it is important to recognise that the child's health (physical and mental), financial status, perception of value of education, and so on, also have a significant impact on the system. We have to win all these battles to ensure final victory.

Five, not everything needs to be done by a central or state government. Centralised schemes need not work. Even the best-designed schemes might not work in a local context.

Six, close the feedback loop. Often, we aim to design the perfect policy in theory but forget to look at it in action. It is useful to review the initiatives regularly and reiterate the initiatives through continuous assessment.

Seven, school as a unit for reform. Problems experienced by the system are around a school and it is the source for diversity in context and challenges. Apart from broad issues, schools should be considered as a unit for reform and steps should be taken accordingly.

Eight, differentiate between necessary and sufficient conditions. Teacher training or other similar initiatives alone might not work. Along with teacher education, a whole range of factors has to work to see improvement in learning outcomes and other results. It is very important to keep this in mind while interpreting evidence and prioritising policies.

Nine, make teachers as partners in the change-making process. Most of the blame of our education system is put on teachers but blaming them may not take us too far. We need to make them a part of the reform process for any sustainable change to occur.

Ten, engage actively with the private system and non-government initiatives. While the end goal is to improve learning outcomes, it need not mean that only the government should do everything. Others who are contributing to achieve this end goal should be viewed as partners and be given the scope and enabling environment to contribute. The trio of strong state capacity, active citizenry and thriving private sector, together with appropriate policies can help us address the poor state of school education.

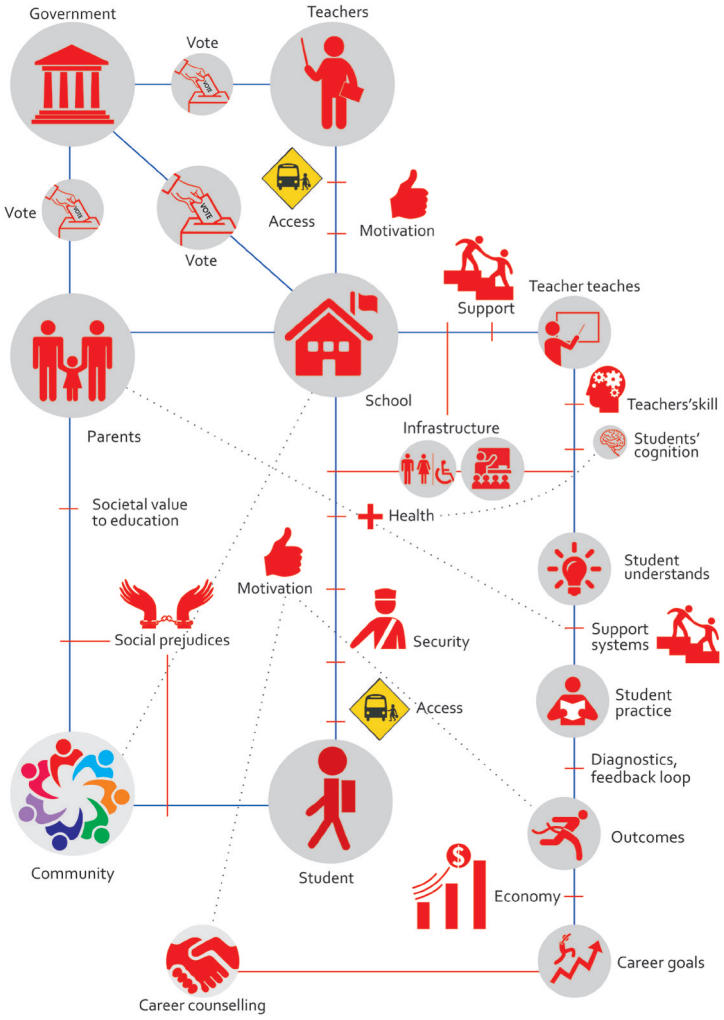
## Framework for school education reform in India

Now that we have set the ground for reform and built an internal compass, we move on to building a reform framework. In a detailed discussion so far, we realised that as of today, weak state capacity is the critical constraint in the Indian public school system. Enhancing the state capacity should thus be our key lever for reforming education which can then be pursued in the following steps.

The first step to reform in education is to appoint competent professionals to key positions in education administration. In the long run, one needs to build systems which will get the best out of people and systems which are not dependent on specific individuals to function but one needs competent people to start with, to build such systems. Fukuyama notes that a key aspect of state building in the United States in the Progressive Era was the replacement of political patronage appointees with university-trained agronomists, engineers, and economists. In our case too, such competent and able officials who share the broader vision of enhancing the capacity need to be appointed. Appointing competent people with strong domain knowledge and leadership enhances the capacity by influencing the first and seventh components of state capacity discussed earlier (also reproduced in Figure 8.4) inherently motivated people and ability of higher level bureaucracy to frame implementation design of policies. Proposals to allow lateral entry of domain experts in to education administration or institute Indian Education Service (IES) on the lines of Indian Administrative Service (IAS) can also be seen as part of professionalising the administration by bringing in administrators with strong domain expertise, which also enhances the capacity by influencing the seventh component of state capacity (Figure 8.4). While continual upgrading of skills of officers continues to be a challenge, having competent people certainly helps. For short term purposes, to begin the process, competent people can be hand picked for key posts in education administration at both district and state level.

The second step in the reform process is to identify all the problems in the education system. These can then be depicted in the education diagnostics map (Figure 8.1). In any reform process, bringing stakeholders on board is an important step. That can be done by crowdsourcing, asking the stakeholders to report the problems that they face in their daily job. This will ensure that we have a comprehensive list of problems and also make stakeholders partners in the reform process by creating a sense of purpose among them, communicating the need for their help and ensuring better coordination. Then, a clear message has to be communicated, reaffirming the commitment to address these problems. Some of their concerns may be true, some unfounded, but each of these has to be explored to ensure that a conducive environment is created for functionaries to perform their duties. Bringing people on board by responding to their concerns will also help address the political economy challenges.

**Figure 8.1: Education diagnostics map**




Once we have the list of problems, the third step is organisational restructuring. After preparing the education diagnostics chart, one might realise that some tasks are not being effectively performed due to the excessive workload, making it difficult for functionaries to focus. In such a situation, consolidation is the first step towards bringing back the focus.

The story of the famed technology company, Apple Incorporated, can help us understand this further. Around 1990, Apple was on the verge of bankruptcy but then it recovered. There can be various possible factors responsible for the recovery, but one of the first decisions that the company took was to cut down the number of its products. It is said that Apple had around 90 products at that point of time. It cut down the number to five—a mere five. This reduced the burden and helped the company focus and do a few things better rather than spreading itself thin and failing at everything. The number of things we do should be proportional to our capacity.

Similarly, the task for an overburdened bureaucracy is to cut down on focus areas. The challenge here is that Apple could cut down its functions but the government cannot do so in the same manner. One cannot cut down the functions completely to create space as above but it can be done through other means by either devolving some of those responsibilities to lower levels of bureaucracy or by increasing the workforce, or by seeking assistance from external agencies. Aspects that are leading to inefficiency due to centralised processes can be decentralised—decisions on teacher transfers, printing and distribution of textbooks. Aspects that cannot be devolved to lower levels can be dealt by increasing the workforce, that is, the number of functionaries—recruiting more teachers to address issues of large class size. Tasks that require special skills or sustained long-term focus can be addressed by seeking assistance from external organisations, such as teacher training. This restructuring will help create focus and space for functionaries to do their job effectively.

It may seem counter intuitive but Indian administration typically tends to be under staffed. The report of Seventh Central Pay Commission notes that the total number of federal/Central Government personnel per lakh of population in India is 139 whereas it is 668 in USA. It also observes that ministries of Science & Technology, Finance, Power, Civil Aviation, and Corporate Affairs have vacancies of over 40% of the sanctioned strength,

which is a high number. This is the situation at central level but states may not be significantly better. For instance, we discussed earlier that more than 80% of headmaster posts are vacant in some states.

Recruiting more functionaries to reduce workload is often criticised citing financial burden on the exchequer and their effectiveness in systems of weak capacity. In education, one of the common criticisms of recruiting more teachers to reduce class size (thereby reducing workload of teachers) is that it may not necessarily lead to improving learning outcomes especially when compared to other cost effective interventions. One must note that these recruitments are generally carried out as a stand-alone task. However, if such an exercise is carried out as part of a broader reform framework with a vision to utilise the additional bandwidth created due to workload reduction, it can be effective in the long term. For instance, it is observed that there is strong negative correlation between inspections and teacher absence.[152] One may need to invest in such staff if needed or other technology based alternatives can be considered.

Looking at it from the perspective of functionaries, it may not be fair to expect high quality work with such constraints and workload. One cannot expect teachers to perform their job effectively keeping the class sizes high[XVII]. When a teacher points out that it is not possible to give individual attention to each child in a class of 90 students, it is hard to explain that reducing the pupil-teacher ratio (PTR) has not always been successful. It is also hard to hold the teacher accountable for the results in that context. It may be worth making these investments but with a strong plan to utilise it appropriately. Workload is a common issue reported across all bureaucracies. A detailed analysis of expected tasks from functionaries at each level and their workload may have to be carried out, wherever possible, to get an objective understanding of the context. For instance, workload of judges is cited as a common problem but consider the graph (Figure 8.2) about workload in high courts.

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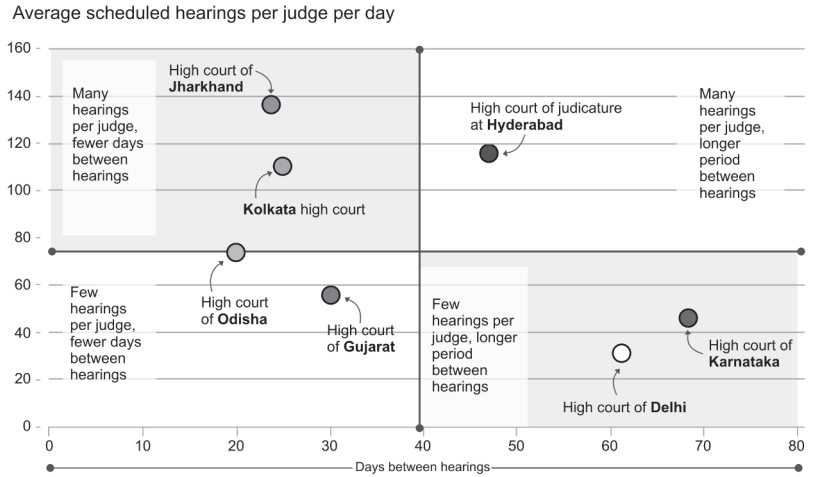
XVII PTR is being used as an example to explain the context. It need not be the problem in all contexts.

**Figure 8.2 Average scheduled hearing per judge vs. days between hearings**




Source: Mint.[153]

We observe from Figure 8.2 that in the case of the high court of judicature at Hyderabad, both the number of hearings per judge and the days between two hearings are high, suggesting greater workload. In the case of the high courts of Delhi and Karnataka, the number of hearings per judge is low but still the days between hearings are too many, which needs a diagnosis of the situation. Such a data-based approach can help diagnose the problem precisely. The challenge, however, is to define such metrics for functionaries at all levels and collect and analyse such data.

The fourth step in the reform process is to identify the nature of capacity required to address the problems identified and depicted in the education diagnostics chart. As Figure 8.3 shows, in order to reach the goal, one has to climb mountains, jump across the valley and also swim across the river, each of which requires skill of a different nature. Similarly, the nature of capacity required to implement tasks depends on the nature of tasks. The capacity required to conduct teacher trainings is different from the nature of capacity required to ensure timely availability of textbooks.

**Figure 8.3 Demonstration of combination of skills required to reach a goal**


The objective of this step is to enhance these capacities. It is similar to making a person who is not able to walk (due to a recoverable injury), stand up and walk again. We do that by setting small goals and ensuring a continuous practice to achieve them, thereby building the capacity to walk, slowly and steadily. We can use a similar approach here—pick up tasks related to capacity of each nature, focus and ensure that they are implemented well. Involving people in executing something seriously and making it a success will break the lethargy cycle. It also builds confidence, capability and skills in the system to face and address issues of similar nature.

One may question, what, then, is the difference between this approach and a mission-mode programme, which also focuses on ensuring implementation of programmes with specific targets and timelines?

Let us take a hypothetical example of building boundary walls in all schools to understand this further. In a mission-mode programme, one would send a strong message about the seriousness of the issue from the top levels, allocate necessary funds and ask all functionaries to focus and complete it within a specified time frame. There are two important phenomena occurring in such a context. One, the bureaucracy operating in this context is not relieved of other responsibilities, but is just being asked to change their priorities. If the bureaucrats are overburdened and have fifteen tasks to do, this approach would give them backing from the higher levels to keep the other fourteen tasks on hold for time being. Thus, this

sense of focus and bandwidth created for functionaries is temporary. Two, the target here is to build boundary walls and not to improve the overall system. In a normal situation, the reasons for lack of boundary walls may have been many—lack of funds, lack of recognition of the importance of boundary walls, delay of funds, issues in tender processes and so on. In the case of mission-mode programmes, temporary arrangements are made around all of these problems to meet the targets. Tomorrow, if one has to paint all those walls, it would still be not possible in the regular system, unless one takes up another mission-mode programme.

The approach to strengthen state capacity through practice, by picking up tasks and executing them methodically, is different from the mission-mode approaches with respect to the two dimensions mentioned above. The first step of this approach is to ease space for focus by devolving, by taking assistance from external organisations and/or by increasing manpower. Thus, the focus created in this approach is not temporary. Secondly, in this approach, strengthening state capacity is also one of the targets along with the construction of boundary walls. One of the important differences is that instead of creating temporary structures around process inefficiencies, one would address constraints as part of the process. If there are delays in fund transfer, instead of transferring funds temporarily for this purpose, one would explore the reasons for the delays and address those permanently and ensure transfer of funds. If there is overlap of decision-making structures, then instead of overriding such structures, these could be fine-tuned. This might take longer than usual, but the capacity built meanwhile has significant spill over effects. If one has to paint the walls tomorrow, the improvements in fund transfer and processes would help in doing this new task without additional efforts.

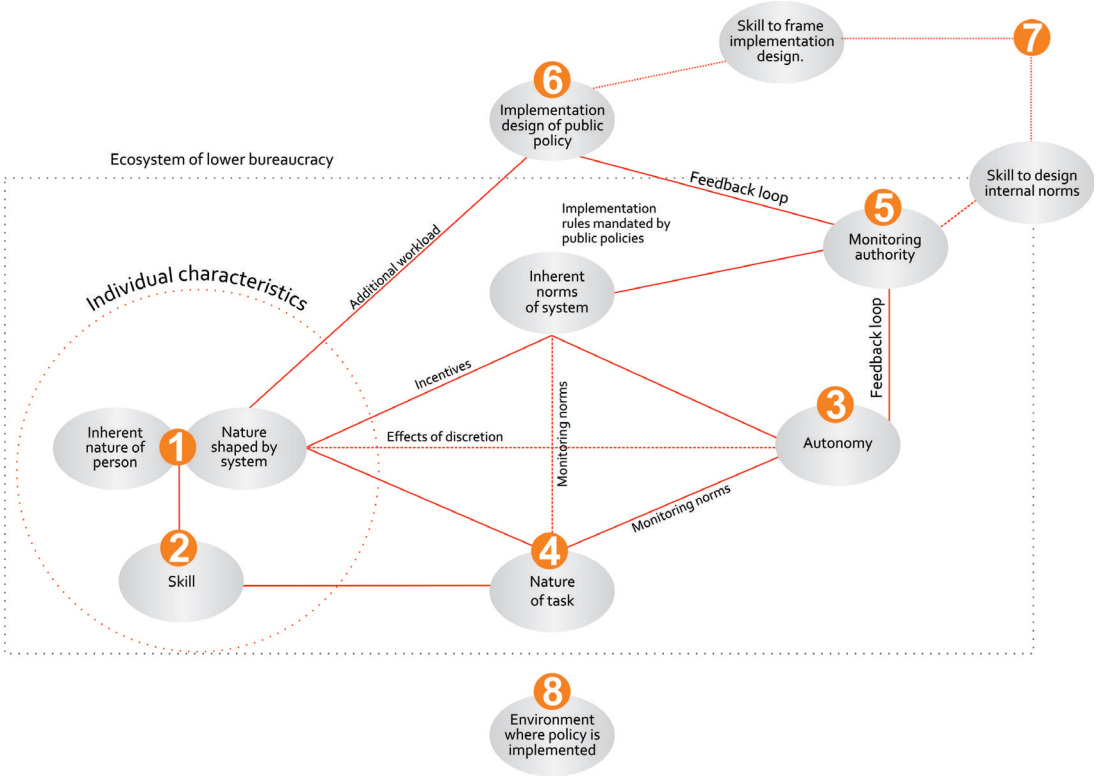
Consider another example: While implementing Mission Gunwatta in Bihar, it was noticed that there was a delay in making textbooks available to students, as they had to be printed at a central place and then distributed. If it was implemented using our approach, this constraint would have been identified and a permanent solution to this delay may have been implemented, such as, printing textbooks at district level, for instance.

Operating through mission-mode programmes is like creating a special corridor for a VIP car to address the issue of traffic congestion, but the approach to strengthening systems is to go through each and every road and junction, mapping the constraints and addressing them so that the journey is easier for every car. It does not mean that it is wrong to make special corridors (mission-mode programmes). Some extreme and urgent cases might need that approach, for example, in the case of ambulances, especially when organs have to be transported during transplant surgeries. This can also be looked at from another perspective. If humans can learn a skill set, can organisations also learn?

If one has to improve these processes, why do we need a target like building boundary walls? Why can't we just identify the documented constraints and change those rules? This is because it may not be possible to identify all the constraints in implementation upfront. They are more visible when we venture out to implement a specific task. Having such a target also gives a purpose to the exercise of easing constraints.

Figure 8.4 can be used to identify and address the constraints while implementing the anchor tasks. If the issue is that problems on the ground are not being reported, then the issue may lie with autonomy and monitoring standards (node 3 in Figure 8.4). Even after the workload is reduced and autonomy is given, if there are no results, then the issue may lie with incentives and monitoring mechanism (nodes 1 and 5 in Figure 8.4). During this process one can also identify the effect of centrally designed public policies on the job of lower level functionaries and fine-tune the implementation design accordingly.

## Figure 8.4: Components of state capacity



The next question is: What is the nature of the different capacities and corresponding tasks that can be used as anchor tasks to strengthen these capacities?

One must note that tasks performed at the district level tend to be skewed towards implementation and tasks at the state level towards monitoring and regulating. There can also be an overlap: Tasks that come under the 'implementation category' of district-level administration can fall under the monitoring category at the state level and so on. Let us list the nature of tasks and their corresponding anchor tasks.

## I. Tasks amenable to rules

A sample anchor task could be, ensuring infrastructure in all schools. This would touch upon issues of delays in fund flows, decision-making timelines, and so on, addressing each of which will help develop the capability of effectively implementing tasks which are amenable to rules.

## II. Tasks related to building intrinsic motivation or improving performance

Human resources department is an important part of any organisation. We earlier noted that we do not find its equivalent in many government organisations. Function of such part of the education bureaucracy involves addressing issues faced by teachers while performing their duty and enhancing communication channels between teachers and higher authorities. One can start with collating a list of problems faced by functionaries at different levels, work on addressing them and communicating the progress on each of those. We do not know the last time when functionaries were asked about their problems and were addressed. Such a move can make them feel empowered.

## III. Tasks that require monitoring and regulation

These tasks involve monitoring, regulating and ensuring outcomes of either the lower structures of bureaucracy or private organisations.

1. *Ensuring basic reading and math skills for all students by Class 3*: The district-level administration can be entrusted with this specific task. This will then become a monitoring task for state governments and an implementation task for the district level. Implementing this task will build the ability to monitor districts based on outcomes at the state level. At the district level, it will enhance the capacity to build internal norms to execute a given task, which is monitored based on outcomes.

2. *Designing monitoring standards and regulations*: Ensuring appropriate design and effective implementation of 25% reservation for low-income students in private unaided schools can be used as an anchor task to develop this capability.

## IV. Tasks not amenable to rules

This category includes tasks that are not amenable to rules, are highly dependent on the personnel at the interface, and require long-term sustained engagement. It again includes two forms of engagement, engagement with functionaries of the bureaucracy and engagement with the community.

1. *Teacher training*: We have earlier discussed the need to devolve this responsibility to districts with the autonomy to take assistance from external organisations, and not to administer it centrally. Districts can use this anchor task to build the capability for implementing tasks that require sustained, long-term engagement. Integrating Continuous and Comprehensive Evaluation (CCE) into the teaching practice and school leaders' training can be the anchor tasks around which trainings can be created.

2. *Operationalising and strengthening SMCs*: Operationalising and strengthening

SMCs can build the capability to implement tasks which require sustained engagement with communities.

## V. Tasks that cannot be devolved

Certain tasks have to be done centrally, either due to economies of scale or because of spill overs across different units of the lower structures. The challenge here is to integrate such centrally designed policies into the system.

1. *Assessment systems*: Investing in research and building capabilities to design and administer assessments can build the capability to overlay centrally designed policies onto the existing systems. This would also strengthen the capability to administer independent assessments.

2. *Curriculum design and research in pedagogy*: Designing the curriculum using the feedback from ground zero will build the capability to integrate the feedback into the design of policies at the higher level. Research in pedagogy and integrating it into the system will enhance the capabilities of monitoring research tasks, and integrating research findings into the system.

The fourth step can help enhance state capacity, but merely increasing capacity may not be enough to achieve outcomes. We will have to design appropriate policies that can be implemented using this capacity.

Thus, the fifth and final step in the reform process is choosing the appropriate policies. Some policy changes that we need are: i) shift focus from time-bound completion of syllabus; ii) teach at the right level of the child; iii) build after-school support systems; iv) reform board examinations; v) allow for-profit private schools; vi) ease regulations on private schools; and vii) vouchers to teachers of public and low-cost private schools to avail training.[XVIII] It is not necessary to do the above five steps one after the other. All five can be done simultaneously.

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XVIII See Appendix IV for other miscellaneous ideas.

We have discussed state governments and district administrations, but we did not talk about the Union government. The critical constraint of weak state capacity can be better dealt locally but there are certain important aspects that the Union government should and can do, apart from setting the broader vision for education, nudging state governments to be updated with latest developments (technology in education etc.) and setting certain aspects of curriculum.

One, *set the tone of education discourse in the country*: The Union government should steer the education discourse towards learning outcomes, and create an atmosphere where education is valued in society. Increasing the societal value of education could possibly reduce dropouts, especially in the case of girls and marginalised communities, and the discourse on outcomes can change the nature of working of states.

Two, *participating in international assessments*: Countries such as Poland took the PISA results in a positive spirit and are striving to improve, while India opted out of PISA, which served no good. Participating in such assessments gives us a clear benchmark of where we are, where to reach, and how we are progressing over time. One can also conduct internal assessments and benchmark them with international assessments.

Three, *ensure public access to quality data*: The 'Young lives' study conducted by the University of Oxford recently pointed to a decrease in the learning outcomes of children.[154] Similar trends were also pointed out by ASER. There is currently little raw, longitudinal data on the learning outcomes of children in India available to the public, to explore the root causes of such serious issues. Some states get third-party learning assessments done, but the data is either not public or is scattered. The Union government should take an initiative to coordinate and collate quality data on learning outcomes from across the states, and make it available to the public. This enables policymakers to make an informed choice.

Four, *monitor outcomes*: We have discussed a great deal about the need for

devolution and letting states take care of school education, but some cases may also arise where it is not taken seriously by some states. This might need some external prodding from the Union government in assisting them to achieve their goals.

Five, *set role models*: In many aspects such as the quality of board examinations, curriculum design and so on, the Union government can set role models by implementing them in contexts where it has the powers to do so (CBSE exams, NCERT textbooks); it can also create a repository of best practices and inspire states to follow the lead.

Finally, a few words of caution. One, school education is a complex issue and the aspects mentioned above are not the only ones that have to be considered. Only the macro aspects fitting into the broader framework are discussed here. There is always room for innovation.

Two, even after achieving all this, we may figure out new challenges and still fall short of our end goal. When one puts in enormous efforts, it is easy to get carried away and take these efforts as proxy for an increase in outcomes, which need not be the case. Regular assessments will help us keep a check. We must remember that ticking off the boxes in the check list is not the final goal—ensuring learning outcomes is. Hence the strategies should be adapted as we learn new lessons.

Three, we need to realise that we still do not know the answers to many questions. Dealing with the uncertainty of not knowing about something for long periods of time is tiring but the complacency of knowing everything may either hinder further exploration of truth or end us up in incomplete conceptions, both of which are not desirable. While we do all of these, we should remember that we still do not understand many aspects and must be open to learning.

After all the discussion, questions still linger: Can we do it? Is it possible? There is no reason to despair. Many countries have done it in the past and we can too. Eradicating corruption, reforming education—wicked problems as they are called, often seems too abstract to be solved. They

seem humongous and deeply entrenched in the system. Even if someone desires to work on them, the multiplicity and complexity of the issues makes it difficult to identify where to start. But the issues are still not insurmountable. A recent example from Georgia provides us with some key lessons:

Corruption in public services was rampant in Georgia. The political regime changed in 2003 and the newly elected head made it his business to address this problem head-on. Some of the key tenets of Georgia's success are documented as—exercising strong political will, establishing credibility, launching a frontal attack on corruption, adopting unconventional solutions, developing a unity of purpose and coordinating closely, tailoring international experience to local conditions, and using communications strategically.[155]

Education can also be reformed if we imbibe these principles. We need strong political will backed with long-term commitment and a vision to address the issue, a sense of urgency, and unity of purpose. These tenets will help us find ways of surmounting the challenges during the reform process without getting bogged down by them. The fact that around 50% children are learning nothing even after five years in school should be deeply unsettling for each and every one of us.

As long as we are committed to our end goal and relentlessly pursue it, we can achieve it. We are an entrepreneurial nation, and it is rightly said that entrepreneurs are those who, when thrown down a cliff, build a flight on the way down and come back up. We need the same spirit and resolution, which is only possible through strong political will and a unity of purpose. In their absence, we will be stuck in a mode of paralysis, despair and cynicism. It is the responsibility of the government and every Indian to drive this agenda and to bring about lasting change.

A friend of mine works as a teacher, taking remedial classes for grade 1 children. There is a child in her class, who is exceptionally good at academics. She has told him and his parents that he does not need the remedial classes; however, the child attends the classes diligently. One

day, she finally asked him—why do you attend these classes when you don't need them? He replied, "Ma'am, I want to study as much as I can, go to IIT and then become an IAS officer." These are the dreams and aspirations of a six-year-old. Any delay in reforming education prevents realisation of dreams of such innocent children, for no mistake of theirs and this should compel us all to act with extreme urgency.

# Afterword

One common misconception among lay middle classes as well as lazy commentariat is the notion that our children are well-educated. We have our Satya Nadellas, Indra Nooyis, Sundar Pichais and other highly successful, visible Indians on the global scene—and they only reinforce this self-mage of a large young population with enormous demographic dividend.

Karthik Dinne, a young Indian and a product of our less-than-happy education system, has raised important questions about our school education in this book. He gave us a rich harvest of the poor state of education in India today. Pratham's ASER (Annual Status of Education Report) surveys have done a great service to the country by forcing our attention on our appalling school outcomes. The OECD's PISA (Programme for International Student Assessment) shamed us by ranking us 73rd out of 74 nations and entities surveyed. The response of the government to the PISA ranking was unpredictable, 'innovative' and stunning—further Indian participation in PISA surveys was banned! If there is no meaningful comparison with school kids in other nations then there is no problem, we can bury our head in sands like the proverbial ostrich, and pretend that the problem does not exist!

Karthik made a systematic, evidence-based attempt to identify the causes of this catastrophic educational failure, and outline approaches to reform. Weak state capacity is the main deficiency the author identified. Karthik gave us the Ten Commandments for reform, even as he wisely refrained from specific prescriptions. Decades ago Myron Weiner lamented our failure in school education (The Child and the State in India). His conclusion is that our failure to educate all children stems from a far more fundamental societal problem which he termed as "the psychology of caste". Our society and state have all too readily accepted inequalities resulting from the accident of birth and there is no moral outrage compelling to focus on quality school education accessible to all as a means of enhancing opportunity for all.

On top of it, with centralisation and the better-off parents giving up on state schools, voice and stakes are delinked in government schools. Those who have voice and some capacity to enforce accountability no longer need the public schools; the poor and illiterate whose children go to public schools have no voice or power to improve them. But in time, we are now faced with all-round failure of schooling—both public and private schools. But most parents of children in private schools are blissfully unaware of the crisis.

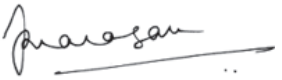
Karthik rightly endorsed the need for promoting competition and choice through voucher system and other innovative means. Such a system would be hugely popular in India, and might even bring down costs while improving choice. Unlike in the rich nations, most of the middle classes and increasing proportion of the poor are giving up on public schools and are voting with their feet by sending their kids to private schools spending out-of-pocket. Choice is necessary, but not sufficient.

Perhaps the most hopeful sign in education is the vast demand for quality education. All sections— rich or poor, urban or rural, Hindu or Muslim— want good education. The problem is, most people have no means of measuring what is good. They only know of examinations, marks and ranks. Perhaps no other nation witnesses such scramble for marks and ranks. This provides us a great opportunity. People want 'success' and good education. As success is measured by an unimaginative examination system that rewards rote learning, we are getting plenty of it. If 'success' is redefined by designing and implementing a sensible evaluation and examination system, the supply side will largely readjust itself because of the pressure of demand for 'success'.

While the current situation is somewhat gloomy, there are reasons for hope. Many fine minds in India are now focused on improving educational outcomes. Karthik Dinne is one of them. There is phenomenal excitement, energy and voluntarism in the field of education. Many charities and non-profits are willing to support efforts to improve education. There are only two obstacles. First, the law must enable reform, not stifle it. Second, the

policy makers and society must exhibit wisdom in making sensible choices from a wide menu of options. Karthik Dinne has given a lot of food for thought to help us make wise choices. All of us—the state, civil society, educators, media, parents— we need to act wisely and swiftly.

With best wishes



***Dr Jayaprakash Narayan***
Founder, Lok Satta Party

# APPENDIX I

## Technology in school education

### Technology for teachers

Technology can help teachers in the following aspects: -

1. *Streamlining administrative work*: Teachers have to do a lot of administrative work as part of their job which often includes communicating with parents, sending messages, updating mark sheets, correcting homework and so on. Technology products can help streamline all of these functions. An app which sends a message to all parents on one tap, a tool through which a teacher can assign homework to students and track the status, a tool which also corrects the homework can ease teachers' workload.

2. *Aiding the teaching process*: Technology can be useful as an aid in teaching to demonstrate experiments which cannot be performed in classrooms, through videos and simulations.

Technology can be of great help in diagnosing students' difficulties. If teachers have to do carry out the granular diagnosis, they would have to design customised assessments for each child and spend lots of time analysing the patterns, which is humanly impossible. A technology product can easily analyse students' responses on a set of questions and can give an automated report to teachers on the learning difficulties being faced in their class.

It can then help in customised remediation of the diagnosed problems. After diagnosing the problems, students have to be helped regarding the same. If all students are not facing the same type of difficulties, each of them needs a different type of remediation. This again is an intensive and time-consuming process for a single teacher to do. A smart tech product can do this. Diagnosis and remediation can together identify difficulties of children early and address those before children reach the point of failure.

3. *Collaborative learning platforms*: Today, there is little interaction between teachers and there is no established platform to learn from others or to share their problems. Technology can serve as this platform connecting teachers from all across, enabling sharing of information among teachers.

4. *Remote teaching*: Live video classes can be a good workaround in cases where there is lack of teachers, especially in higher classes.

**Technology for students**

1. *Learn at their own pace*: Some students may learn slowly and some may learn faster than the pace of the classroom. Students who learn slowly can practise more and learn at their own pace; similarly, students who learn faster can learn advanced concepts through a good technology tool.

2. *Practising questions*: Paper-based worksheets have their own limitations. Technology makes it possible to generate lots of dynamic questions especially in mathematics, which can help students practise and strengthen their concepts and computational speed.

3. *Collaborative learning platforms*: Students have doubts, which they may not be comfortable asking others or they may not have access to someone who can clarify their doubts. Technology platforms can enable peer-learning.

**Problems with technology tools today**

One, many technology products in education today are addressing the administrative aspects in schools like smart classrooms, apps to ease communication between parents and teachers and so on. While, this may be necessary, there is relatively little focus on the core important areas related to learning like diagnosing students' difficulties, customised treatment, and so on. Many of the available learning tools also focus on practice questions or mock exams but not on diagnosis and remediation.

Two, lack of an integrated approach. A good learning tool should be able to teach using appropriate pedagogy, understand students' difficulties, engage and motivate children, and have the ability to use the data of students' responses to make intelligent decisions. Many tools do not have

this balance: They are either excessively focused on engaging the kid with good visuals with little emphasis on learning or they are excessively focused on pedagogy without engaging the child, or they do not leverage data to generate intelligent responses. Lack of relevant research pool on these aspects is also an issue.

Three, the broader issue with the discourse on technology in education today is that technology is often seen as a substitute to teachers. Technology has not advanced enough yet to perform all these functions. In such a scenario, it is best to use it as a tool complementary to teachers. Most technological interventions neglect this aspect and assume that the computer alone can teach. This is also reflected in the studies conducted around these aspects, where teachers are replaced with technology and if it does not show results, the whole theme of technology in education is questioned.

**Problems in integrating learning tools in classroom**

One, comfort levels with technology: Most teachers are not tech savvy and hence using computers is a mental block to them.

Two, teachers' beliefs: A teaching methodology is a belief. Teachers have their own comfort zones regarding teaching methodologies and might not yield easily to other modes of teaching such as those which involve using data from students' responses in teaching process.

Three, time constraints: Teachers in a typical school are under pressure to complete syllabus. Using student response data then becomes an additional workload, instead of easing it. This again underscores the need to slow the pace of the syllabus so that teachers will have the bandwidth to leverage these tools.

Four, lack of trust: Technology is often pitched as a substitute to teachers, not as complementing teachers. This creates trust issues and complicates the process of creating buy-in from teachers and stakeholders.

**Issues in ICT interventions by government**

1. *Infrastructural issues*: The initial challenges are infrastructural; access, availability of electricity, and reliable Internet connectivity.

2. *Lack of support structures*: Technology-based interventions suffer from the same problems as most other interventions—lack of implementing capacity. This is manifested in terms of inadequate training and communication to teachers on the scope of the tool, and also lack of efforts on their part.

3. *Lack of vision*: Technology is often equated with distributing tablets and setting up computers in schools. Integrating technology in classrooms requires vision and clarity of its purpose and the requirements. The implementation of technology in schools often lacks clarity on two aspects.

(i) The purpose of technology. Is the purpose of technology to show videos to children, to diagnose students' difficulties, to help students practice, or is it something else? The OECD PISA report on technology and learning rightly highlights this aspect. Instead of asking, "What is the impact of technology on learning?" it would be more appropriate to ask, "what can we use technology for, how and why?"

(ii) Content and pedagogy. A technology tool is good as its content. Merely distributing tablets and computers without ensuring good content in it defeats the purpose.

4. *Sequencing of tools*: Electronic equipment is not durable and hence all the aspects–hardware, training, and content–have to be implemented with an integrated approach. If computers and tablets are rolled out without content with the expectation of building content later, the hardware might get damaged by that time.

Overall, technology can be of great help but implementing it in public school systems require strong state capacity. Effectiveness of investments is an important concern while deciding policy priorities. Investments in

human resources such as recruiting more teachers may not show outcomes in the short term but these can be certainly leveraged in the long term if one decides to. On the contrary, investments in hard ware which form major component of costs may become obsolete in some time and cannot be leveraged later, unlike human resources. In a resource constrained context, it is always a tough choice to make. Thus, though technology can be useful it should be administered in a way to optimise the investments within the life time of the hardware.

# APPENDIX II

## Criticisms of learning assessments

People often express concerns over use of assessments and it is a highly debated topic. The arguments of proponents and opponents are summarised below.

**I. Assessments lead to perverse incentives and narrow the focus of education**

**Arguments**

1. Students' performance is often dependent on external conditions such as the support systems at home, economic conditions and so on, which are not entirely in the control of teachers. Hence, it is not justified to hold teachers completely accountable for the results.

2. When the results of assessments are linked with teachers' pay and are used to promote or terminate teachers' employment, it leads to perverse incentives. Teachers try to game the system to reach the targets, instead of actually teaching and they can narrow the focus of learning, teaching only the concepts that are asked in examinations

3. Attaching high stakes to the results of assessments leads to mental stress among students. This narrows the focus of children, to study only aspects related to exams, which is not good for the overall development of children.

**Counter arguments**

1. There are different types of assessments. The above problems are only in cases where high stakes are associated with the results of assessments. This does not mean the other forms of assessments, especially diagnostic assessments that are meant to understand students' difficulties, or low stake assessments, are bad.

2. A system that cannot hold anyone accountable is ripe for failure. It is well established that monitoring based on inputs is not sensible. The absence of accountability and monitoring based on outcomes will only lend a free hand to people and amplify the problems of poor attendance and efforts on the part of stakeholders.

3. There are problems with every incentive, not just in education. Accountability and incentives are not bad per se but the negative effects depend on the structure and design of the incentives. So instead of removing them in totality, the focus should be on designing them better. There are rigorous studies which show that certain forms of incentives for teachers do improve students' learning outcomes.

4. The effect of incentives is also dependent on the context of the system. If it is a poorly performing system where teachers are not even taking classes, then having some form of incentives and penalties brings seriousness to the job and they will at least attend school.

**II. Inappropriate assessments**

**Arguments**

1. Assessments do not test real knowledge and understanding of students. They are rote-based and only encourage rote-based learning.

2. The questions in assessments are not relevant equally to all contexts. For example, consider this question: "A pizza is cut into 8 equal parts and is distributed equally among 4 people. What part of the original pizza does each person get?" This might be appropriate for the US context but students in an Indian village might have never heard of or seen a pizza. Hence they cannot make sense of it and are at a disadvantage in such assessments.

**Counter arguments**

1. If questions are improper, then framing better questions is the solution, not discarding the assessments.

2. If the context is not appropriate, having context-appropriate questions is the solution, but this should not be an argument to discard assessments altogether.

**III. Assessments are not comprehensive**

**Argument**

A child's ability is more than performance on the concepts taught in a classroom. The learning assessments do not capture other aspects like critical thinking, emotional quotient, grit, perseverance, communication skills, which are crucial for the overall development of a child.

**Counter arguments**

1. The learning assessments are one among the various aspects that are necessary. Tools to measure other aspects have not evolved yet. Hence, assessments on academic learning are the best possible approximation. The fact that other aspects are not being measured should not mean that academic outcomes should not be measured.

2. The learning assessments are not a mere test of children's knowledge. They also reflect other abilities like critical thinking, perseverance (required for understanding difficult concepts and preparing for examinations) and so on. A well-framed question on geometry is not merely a test of knowledge of geometrical concepts but also tests students' ability to analyse, logically deduce and draw conclusions.

3) Themes like critical thinking, inference are abstract concepts. At the end of the day, one needs tools to teach and assess them. The concepts taught in classrooms are tools through which one can help build these skills in students.

**IV. Diagnostic assessments are a temporary solution**

**Argument**

Diagnostic assessments, similar to the questions on decimals discussed in the previous section, which aim to identify students' difficulties, can only

offer a temporary solution. The core problem is that these misconceptions arise because either teachers do not teach these properly or students do not have to think critically enough before forming conceptions.

Today, we may identify misconceptions in each concept and patch them by giving ready-made answers. Who will help them later or in fact in other aspects of life, where they form conceptions without thinking critically? How will you prevent them from making incorrect inferences and forming wrong conceptions?

Excessive focus on the diagnostics assessments and making them the prime objective is turning the focus away from addressing these core problems.

**V. Students will learn with time, diagnostic assessments are not important**

**Argument**

Even if students have incorrect conceptions about addition or length today, they will grasp them as they grow up. Hence excessive focus on these is unnecessary.

**Counter arguments for IV and V.**

1. The argument that there will be no misconception if students are taught using a perfect methodology (if there exists one such) assumes that students' mind is a blank slate and providing correct information in a perfect manner leads to correct conceptions. This is often not true. Each student has different experiences and hence different prejudices. Even if the same accurate information is provided to children in a perfect manner, each of them may interpret it differently based on their existing prejudices and past experiences. Hence, it is important to understand the difficulties of individual children, which are unique to them and treat them accordingly.

Diagnosing and remediating is also a part of teaching. Appropriate teaching and remediation through diagnostic assessments are not mutually exclusive. We need both.

2. The levels of motivation and support systems at home differ among students. Those with high motivation or good support systems at home can sustain even if they are wrong sometimes or do not understand the concepts. But for students with low motivation or weak support systems at home, repeatedly getting marked incorrect demotivates them further and if this persists, it can lead to dropouts or permanent disinterest towards education. Hence, it is necessary to diagnose the difficulties of children and address them immediately so that they do not make mistakes, even if those are silly.

3. Some concepts may get autocorrected as one grows up, but it need not be so, and this comes at a cost. A student may understand a concept taught in Class 3 only in Class 6, but meanwhile she will lose out on all the concepts taught in classes 4, 5 and 6, which were based on the concept taught in Class 3. This increases the learning gap. In the case of students with low motivation and weak support systems, this gap is harmful. Once a child falls back, it is difficult to cope up in environments with weak support systems and low motivations, and it may lead to dropouts and disinterest towards education.

**VI. No assessment at all**

**Argument**

Assessments harm the child by increasing stress and creating anxiety. Hence they should not be undertaken.

**Counter argument**

The above argument puts all forms of assessments in one category. For example, diagnostic assessments are to understand a child's difficulties. Without knowing what the child knows and does not know, one cannot teach children effectively. The above argument also assumes that assessment is different from teaching. Assessment is also a part of the teaching process.

### VII. Assessments alone do not lead to outcomes

#### Argument

Weighing malnourished children repeatedly will not increase their weight. Similarly, merely doing learning assessments will not help children learn.

#### Counter argument

Assessing children is only a necessary condition but not sufficient. There are many factors that are involved in helping a child learn (parental education, environment at home, health, and nutrition) and none of these alone is a necessary and sufficient condition. Learning assessments alone may not lead to outcomes but they are necessary in this process.

Overall, as usual the truth is somewhere in between. All assessments should not be looked through a single lens. In any debate on assessments, one should first identify the nature of assessments being discussed—diagnostic (formative) or summative assessments. Low-stake diagnostic assessments aim to provide feedback to teachers. If it is about summative assessments, then it is useful to separate the questions: Should it be tested? If it is tested, what should be done with the results? Should teachers be made accountable or should they be incentivised? If teachers are being penalised, what should be the extent of such actions—termination from service, or some milder form of punishment? The desirability of assessments then depends on the answers to these questions.

# APPENDIX III

## Definition of high-stakes examination

High-stakes testing of students is a commonly used term in the education space. The perception of high stakes is subjective and can widely vary. A teacher strongly warning a child to perform better in exam can also be a high-stakes exam to a student and some argue that 10th board examinations are also high-stakes examination. Hence it is useful to understand the meaning of high-stakes examination in the context of assessments. A high-stakes examination for students should satisfy all the following criteria.

1. *Exam completely denies opportunities ahead*: An examination conducted in a school where the teacher strictly orders a child to perform well might seem high staked to the child, but it does not come under the category of high-stakes testing that we talk about.

We need to see if the examination determines whether the child can pursue a career ahead in a particular field. For example, if we were to say that those who do not get X number of marks in Class 10 cannot take up math in +2; we are completely denying further opportunities to students here. This would make the test high-stakes. Note that this is different from students with low marks getting admission only into not-so-good colleges. In this case, students are getting admission at least somewhere; they are not being denied the opportunity completely.

2. *Timing of the test/assessment*: If the test is denying further opportunities, the next criteria to be looked into is—at what stage of the child's career is the test being conducted? If the test is conducted in Class 5 and its results determine children's entry into high school, it is a high-stakes test. CAT also determines entry into MBA colleges, but it is at a very later stage of life and does not deny opportunities as much as a test at the Class 5 stage.

3. *Gradation of the opportunities available*: What happens to the child who does not perform well? What are the alternatives? In the case of CAT, if not one IIM, there are a good number of other colleges to pursue the course. Even if one does not excel in CAT, it is not the end of the road. It is slightly different in case of of IIT-JEE, since it is at a relatively earlier stage of life and there is a steep decline in the quality of colleges ranked lower than IITs, it might be termed high in stakes. We must note that this is also a function of time. These days, with the growing economy, there are ample opportunities available for people to excel even if they do not go to IIT; hence the high-stakes perception of the exam is coming down.

4. *Number of attempts available*: The final criterion is the number of attempts available. If only one attempt is allowed, it is relatively high-stakes compared to having multiple attempts available.

In the case of Class 10 exams in India, the first criterion itself does not hold, because not getting good marks in Class 10 does not officially make students ineligible to pursue studies ahead. Though Class 10 board exams do not satisfy the above criteria, it is a big deal because people attach value to it, because these marks are perceived to reflect students' ability to some extent. For that matter, any test at the end of school, which aims to benchmark students, thereby having a signalling function, will definitely get this attention. But it should not be called as high-stakes test merely because of that.

# APPENDIX IV

## Miscellaneous ideas

Other miscellaneous things that the government could do in addition to those discussed in the main text are listed below. There is no empirical basis for these ideas, but there is a definite need and they are worth trying.

1. Appoint Chief Evaluation Officer and Chief Data Scientist: The Chief Data Scientist and Chief Evaluation Officer will together be responsible for building data systems, procuring and maintaining necessary data, assisting districts in evaluating some of their initiatives and sharing inputs for policymaking.

2. Guest lectures in schools: Children love new people in school. Renowned personalities or alumni can be invited to share their thoughts with students, giving them guidance and advice.

3. Connecting old students to schools: Seeing successful students is one of the best forms of satisfaction for a teacher. A simple platform could be built where old students can request details of their teacher and they can get in touch with each other. Such alumni groups can also take some responsibility of improving their school.

4. Regular meetings between the Chief Minister or District Collector or public representatives with teachers: These meetings can happen once in a month where groups of teachers get to meet these people and share their thoughts, concerns, and so on. This will give a sense of empowerment to the teachers and ensure that they are being heard.

5. Influential people teaching part-time in schools: This can increase the societal value associated with the teaching profession.

6. Exchange of teachers: Teachers from other schools could visit for one or two days, for the sake of change and also to exchange notes on best practices.

7. Tie up with junior colleges (+2) for admitting high-performing students from public schools: This is to give a launch pad to hard-working children to get into good undergraduate colleges.

8. Remaking brand image of government schools: Public schools have a bad image associated with them. A marketing or PR campaign on a small scale can rebuild the image of public schools.

9. Database of health metrics: Similar to learning outcomes, the health metrics of all children can be tracked.

10. Dashboard with details of schools and their facilities: A clear dashboard showing the status of infrastructure and other details of the school can be prepared. Volunteers can update these details based on their visits. The idea is to ensure all facilities in a time-bound manner so that attention can be focused on other areas.

11. Involve university students as volunteers to encourage enrollments in secondary school: Sharing information about the returns on education and convincing parents to send their students to school, especially in secondary schools and marginalised communities, can be valuable. University students in towns and cities can be involved in the effort.

12. Felicitate parents: This is to enhance the societal value of education and encourage parents.

# APPENDIX V

## Channels to contribute to education reform

After reading everything about problems in education and reasons behind them and possible solutions an obvious question is—how can we contribute to the school education reform? It can be approached based on two factors—what is needed and what can you do?

*What is needed?*

Reforming any sector is similar to treating an ailing patient. The nature and intensity of treatment depends on the nature of the ailment. In medicine, we have broadly three approaches: i) Shock therapy – a short, intense external stimulus given to a patient; ii) physiotherapy – low-intensity, repeated exercise to strengthen certain body parts; iii) surgery – short but requiring high skill and intensity.

The required reforms can also be categorised similarly, depending on the nature of efforts required to advocate and implement them:

i) Shock therapy reforms are the one-time reforms where one is advocating for the enactment of a new/particular amended rule/law. One can advocate for these by being outside the system and get them done by persuasion or pressuring. Changing laws to allow for-profit private schools etc. come under this category.

ii) Reforms requiring the physiotherapy approach are those that require long-term focus to make things work. These can be boring, time-consuming, with no visibility of immediate outcomes, requiring regularity and patience. Just like physiotherapy, the net effect of all these will be visible only after a certain time, conditional upon long-term practice. Improving the efficiency of systems and changing the culture of an organisation best suit this category. Iterating and reforming maze of internal norms of bureaucracy comes under this category.

iii) Reforms requiring surgical approach are those where a high degree of skill is needed to carefully handle the systems for bringing them back to the correct position, at the risk of putting the system on hold for a certain period. Drafting regulations and laws and other aspects needing technical skill come under this category.

At times, there is an overlap between ii) and iii), because regulations have to be amended, but the necessary loopholes and constraints are known when they are in implementation stage. At any given point of time, required reforms to be undertaken can put in any of these three categories and a particular reform can be in any of these categories at different points of time.

Depending on the nature of problems that one is sensitive about, one can ask themselves: What should be done to fix this? If we have a broad idea or pointers to this question's answer, it is useful to assess whether the required path for reform is a shock therapy, physiotherapy or surgical in nature. This helps us to chalk out the strategy for advocacy and also sometimes useful in choosing the career path.

*What can we do?*

Diverse members of civil society can play a variety of roles in influencing policy and help steer education reforms onto the right path:

1. *Evidence builders*: We still do not know and do not understand many aspects of education. In the absence of data, it is difficult to structure the debate and nudge it towards a correct direction. Evidence acts as an indicator and guiding light in navigating a complex maze. One can become an evidence builder either by getting into academia or generating data like ASER.

2. *Generalists*: Generalists are those who can appreciate the problem from different perspectives and can structure the vision and policy. They also help in deciding policy priorities, since they can appreciate multiple perspectives. They are necessary in contexts like education, when the sector is extremely specialised and fragmented, to bring unison among them.

3. *Teachers with policy perspective*: Frontline employees who are actually implementing the policy have rich information about ground zero but they often may not be able to look at these issues from a broad perspective and think of appropriate policy changes. People who are responsible for the designing of policies may lack the rich information that frontline employees possess.

We thus need people who are at ground zero, experiencing the reality and can also think from a broader perspective. Such combination makes people Dr Atul Gawande unique. He was trained and worked in policy and politics before become a medical doctor. Thus, he brings unique perspectives to problems in healthcare, taking examples from ground zero and fitting them into the policy narrative.

4. *Politicians with conviction*: There is no substitute to a strong and committed leader driving change. It might be possible to do without one, but it will be hard and time-consuming. It is a tough path but provides wide scope if one can reach there.

5. *Entrepreneurs*: Some people prefer the systemic approach and persist for a long time to make the permanent systemic changes happen. For example, some say that teaching practices to instill scientific temper and critical thinking skills require strong systemic capacity and they either wait or work towards a systemic change, but some others address the problem head-on by engaging with schools and initiating the change. Entrepreneurs create products to make this happen, approach schools, convince them and initiate the change, even if it is small at the moment. As discussed earlier, entrepreneurs in education are necessary to bring innovation and support schools, which desire to genuinely improve and have resources to afford.

6. *Activists*: Activists mobilise support and help create pressure to bring in the necessary reforms. They also help in enforcing accountability and oversee the implementation of certain government policies, for example, RTI and reservation of 25% seats for students from low-income communities. Though these policies exist on paper, it requires many people across the

country to put them into use and in some cases make the local officials implement them, thereby bridging the policy-implementation gap.

7. *Communicators*: Communicators are those who take the information to a broader audience, in terms of cartoons, songs, articles or public speeches or who disseminate research to the public. This helps create an informed citizenry and build the necessary critical mass required to create change.

8. *Bureaucrats who can improve state capacity*: Strengthening state capacity is in the hands of politicians and bureaucrats at the end of the day, and they are the ones who have rich ground zero experience, information and powers to do so. We need bureaucrats who can use this experience and think from a broader perspective about ways to strengthen state capacity.

9. *Idea generators*: External organisations like think tanks and NGOs generate new ideas, prototype and fine-tune them, which may not be possible for the government to do.

10. *Fighting ideological battles*: As in any other sector, there are ideological battles in education too. There is stigma associated with the word private, resistance to certain second-best solutions like ensuring reading and numeracy as priority (in the absence of best solutions), which can only be addressed by engaging with more people, convincing them and building support around these ideas.

11. *Starting a school or teaching students in free time*: This is a low-scale but high-impact approach and the most preferred one. A good school and mentoring of students can create a significant impact on the children who attend them. This can also plug gaps in places where there is no government reach. One can also innovate and demonstrate pedagogical models in their schools inspiring others.

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## About the Author

Karthik Dinne is a public policy enthusiast, specifically interested in education and governance. Five years ago, he started his journey to understand these issues. The learnings from the journey have taken the shape of this book. Karthik is a graduate of Indian Institute of Technology, Kharagpur. He blogs at iterativeadaptation.blogspot.com. He can be contacted at dinnekarthik@gmail.com.

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**Rukmini Banerji**

**Director, ASER Centre**

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*"The author has done a great service by pin-pointing 'weak state capacity' as the prime cause of infrastructure deficiencies and poor learning outcomes in publicly-provided K-12 education. It is a moot point whether weak state capacity is willful or accidental. I believe it is willful, driven by the motivation of perpetuating a gullible and subjugated electorate."*

**Dilip Thakore**

**Editor, EducationWorld**

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