BROOKINGS INDIA

Accelerating Access *to* Quality Education

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Preface

Research on education was always a priority at Brookings India, with the added desire to go beyond the mainstream. While thinking about ways to do this, we came into contact with a group of Teach for India alumni, with whom we had a most revealing interaction. Hearing them speak about their motivations and the challenges they faced and, most importantly, why they decided to stay on in the sector after their fellowships were completed stimulated us to think about a research agenda and an approach that this volume reflects. The main insight that we got from these conversations was that there simply wasn't an adequate bridge between last-mile conditions and policy thinking.

We followed this up with a number of discussions with a range of organizations in the education domain. Notably, we invited a group of about 15 school principals and teachers from the Delhi state and municipal systems to talk about the issues that are addressed in this volume. This was, literally, a most educative encounter and further strengthened our belief that bringing multiple stakeholder views together under a simple organizing framework could make a significant contribution to the policy debate.

These were the two foundations of this volume. There were, of course, several more interactions and discussions as the network developed and we explored the willingness of people to contribute and their perception of its value. We see this collection as the beginning of a process, which, we hope, will continue to engage all the people we have been in touch with and others in working collaboratively towards practical and effective education policies.

Ultimately, policy formulation is too complex a process to be the exclusive responsibility of any one group. Unfortunately, as desirable as it is to get the inputs of all stakeholders, that too is a complicated and unwieldy process. We believe that think tanks have a crucial role to play in making this process a little more tractable, both through developing conceptual frameworks that can bring together different perspectives and by convening conversations between stakeholders. This volume and the activities it will hopefully stimulate is very much in this mould.

Subir Gokarn and Rohan Sandhu, *Editors*

Acknowledgments

We would like to acknowledge the contributions of many people to the process of putting this volume together. Our first "thank you" goes to the authors who accepted our invitation to contribute essays, while adhering to our briefs and timelines. We want to particularly acknowledge two of our last-mile contributors, Devanik Saha and Rupal Nayar, who were instrumental in the early stages of this process, bringing people, experiences, and ideas together.

We are particularly grateful to the participants in the roundtables we organized. Representatives of various organizations involved with education met us in one of these, while a group of teachers from the Delhi system met us in another. Apart from the very rich discussions of several issues that are addressed in this volume, the title of the volume itself emerged from these discussions and has provided us a robust organisational framework for our ongoing research agenda. In particular, we would like to acknowledge two members of the teaching community, Snehlata Yadav and Rajesh Malhotra (who also contributed to this volume) for their engagement and contributions. Pooja Bhatt, also a contributor, came up with the title that clicked.

Finally, we would like to thank all our colleagues in Brookings India, present and past, who facilitated, supported, and encouraged our efforts. We would also like to express our gratitude to our interns, especially Devansh Tandon and Trishi Jindal, who provided exceptional assistance during the final editing process.

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Accelerating Access to Quality Education: Motivation, Framework, and Approach

Subir Gokarn & Rohan Sandhu

Introduction

We have gotten used to thinking that there is an inevitable trade-off between volume and quality. Mass production, we believe, is inevitably accompanied by lower standards. While this may be acceptable in situations where consumers are aware of the differences and make their choices on the basis of "value for money" considerations, it raises many questions about equity and fairness in situations in which information is limited and the consequences of choices are realized over a lifetime. The delivery of public goods, such as education and health, is particularly vulnerable to the acceptance of this trade-off. Yes, we want all young people to be educated. Yes, we want everybody, regardless of income or wealth to have access to medical care. But, if we accept the trade-off as inevitable, strategies for increasing access often see lowering quality standards as a price worth paying.

This volume is motivated by the fundamental premise that the trade-off is not inevitable. Large bodies of evidence, from other countries as well as India, suggest that it is possible to expand access to education while maintaining quality standards. India has clearly succeeded in getting young children into school, but high attrition in the secondary phase suggests that it has not succeeded in equipping them enough to sustain. The individual and social consequences of this can and will be significant. A meaningful

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education policy must address this, drawing as much as possible on what we already know from experience and experimentation.

Our objective of bringing the contributions in this volume together is to bring the perspectives of several stakeholders in education to bear on this premise. The collection is by no means either comprehensive or representative. But, we believe it addresses enough critical issues and brings into the discussion enough approaches and solutions to get the debate on education policy reform off to a solid start.

As the title suggests, our organizing framework comprises three elements – access, quality and acceleration, or scaling up. This framework is used to organize the contributions to this volume beyond this introductory essay. They are organized into three sections, each representing one of the elements of the framework. Each one provides some key insights and, mostly, concrete recommendations based on them, which together provide a substantial foundation for education policy. As is obvious, our contributors have varied backgrounds. We thought that it would be a great supplement to their views to have some thoughts from people with direct experience of the last mile – actual contact with students. Our work in this area has benefitted enormously from interactions with this group and we firmly believe that their insights must be far more systematically incorporated into policy thinking than they currently are.

This chapter essentially lays out the three-element framework and provides a broad overview of issues and evidence relating to each of the elements. It is intended to provide both a context for a diverse set of contributions and a link between them, and the wealth of research and policy literature that deals with the complex challenges in this absolutely critical domain.

The margins of error are small and the consequences of being wrong are enormous. We think the essays in this volume and the thinking and debate that they will stimulate will help the country make better choices.

The Context

The Right of Children to Free and Compulsory Education Act – or the Right to Education (RTE) Act – was enacted in 2009, rooted in the understanding that "the values of equality, social justice and democracy and the creation of a just and humane society can be achieved only through provision of inclusive elementary education to all." The Act effectively obligated the state to provide "free elementary education and ensure compulsory admission, attendance and completion of elementary education to every child in the six to fourteen age group."

Over the past six years, the RTE's successes in expanding the reach of the education system, and precipitating a substantial increase in elementary school enrollment across the country, are undisputable. The ASER Centre's survey finds that, in 2014, over 96 percent of all children in 6-14 years age group were enrolled in school, marking the sixth consecutive year that enrollment levels were as high.

Despite these noteworthy advances, however, ASER reports have repeatedly depicted a discouraging image of the performance of the education sector in terms of learning outcomes, with basic reading and arithmetic skills continuing to be low. For instance, only 54.8 percent of students in III-V grade are able to read at the first-grade level, and only 39.7 percent of these students can perform basic arithmetic functions (ASER, 2013). These trends in learning outcomes are reiterated by several other studies, including those by Educational Initiatives (EI) and the Programme for International Student Assessment (PISA).

All of these statistics establish unambiguously that the country's learning levels are low, and that increases in enrollment notwithstanding, our primary school system has been unable to improve levels of learning in the country. The Ministry of Human Resources Development's (MHRD) announcement of a New Education Policy – the first in nearly thirty years – provides an opportunity to create a framework to make quality and learning outcomes a focus of the education system.

There must be a simultaneous focus to make this high-quality, outcome-oriented education accessible to 135 million students. In terms of access, if the goal of meaningful access is an increase in learning outcomes, the primary challenge would be to enable the various institutions of learning – including, inter alia, private schools, government schools, and remedial centers – to co-exist with an equal focus on quality and scale. In addition, several innovations are already underway and successfully driving change, in various parts of the country and at different levels of scale. Accelerating these initiatives to expand their reach and successes is crucial in enabling India to expand access and improve quality of education efficiently and effectively.

While the RTE has sought to expand the coverage of primary education and has largely been successful in doing this, it has done little to improve the aspects of quality and learning, which have received scant attention in education policy. The Ministry of Human Resource Development's (MHRD) Results Framework Document 2012-2013, for instance, outlines a variety of priorities and goals for education policy – including access, equity, quality, and departmental processes – but there is no mention of education outcomes. In addition, 'quality' is defined solely in terms of inputs and investments into the education process (Muralidharan, 2013). The State Report Cards produced by the District Information System for Education (DISE), which – despite being portrayed as providing a comprehensive set

of statistics for the Sarva Shiksha Abhiyan (SSA) – only provides data pertaining to inputs and investments, and not a single piece of information on learning levels or outcomes (Pritchett, 2014).

The high priority that India's education policy ascribes to inputs and investments reflects a thinking that such inputs will eventually translate into higher levels of learning. Reports on learning outcomes however refute this line of thinking, indicating instead the need to make learning outcomes the cornerstone of education policy.

Why focus on learning outcomes?

Learning levels in a country are directly linked to broader issues of economic development, and research (notably by, Hanushek and Woessman) has empirically demonstrated a causal relationship between education outcomes and GDP growth. Reflecting a similar line of thinking, President Barack Obama noted recently that the nation which "out-educates us today will out-compete us tomorrow."

Research from around the world also demonstrates that just increasing access to education or attendance in schools does not yield increases in learning. Ferreira, et al (2010) explain this, in the context of cash transfers conditioned and school attendance in Latin America, writing that there is very little evidence to show that such conditional cash transfers (CCTs) have actually helped improve learning outcomes, measured by achievements in standardized examinations. They conclude that the impacts of CCTs are confined largely to the "immediate behaviors on which the transfers are conditioned," and that longer-term improvements in learning require a broader set of measures.

Significantly, when programs like conditional cash transfers or the Right to Education increase enrollments in schools, they cause an influx of first-generation learners and children from low-income families into the school system. This necessitates a greater emphasis on the quality dimension of education – schools should be able to cater to the specific needs of these students who often need additional (and remedial) assistance, and pedagogy must evolve to address the needs of an increasingly diverse and unequal classroom.

When the education system is unable to address this quality challenge, broadening access to include marginalized children ends up being an exercise in futility, as children do not learn in school and invariably fail to advance, or drop out. This has been observed in countries such as Brazil and Mexico, where children benefiting from cash transfers were found more likely to drop out than non-treated children. In Brazil, for instance, Soares, et al (2007) find the failure to advance to be higher by 4 percentage points for CCT-covered children than others. This difference is attributed to the fact that these students have been

out of the school system for a while, and have trouble catching up to those who have always been in school. Therefore, a focus on just access and not quality or learning, allowed more students to attend school, but did not enable school systems to retain these students.

In India's case, high drop-out rates between primary, upper-primary, and secondary school indicate that the education system is not meeting the demands of students and parents, pointing to a crisis in terms of quality of education. Now that we have been successful in getting almost all of the nation's children into schools, the next set of reforms must seek to increase learning levels, while addressing the specific needs of first-generation learners, and preventing them from dropping out.

Creating a Quality Framework

Internationally, there has been a paradigm shift towards a focus on learning outcomes and quality. Goal 6 of the United Nation's Education for All framework aims at *"improving all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills."*

Quality and learning levels have been a part of Indian education policy since at least the 1986 National Policy for Education and the subsequent Programme of Action (1992). But neither document created a framework to nudge the education system towards an outcome-orientation. Subsequently, with missions such as the Sarva Shiksha Abhiyan and the Right to Education Act, the focus shifted to increasing enrollment, and quality was seen only in terms of inputs and investments.

In light of this, the 12th Five Year Plan must be lauded for reintroducing a focus on outcomes in education policy, and moving the education system to develop a framework to increase quality and learning outcomes. Now, the MHRD has commenced a consultative process for a New Education Policy, which includes elements such as learning outcomes in elementary education; new knowledge and pedagogies for teaching; school standards, assessments, and management systems; and reforms in the school examination systems. As such, this new policy document provides an important opportunity to develop a holistic framework to address the outcomes- and learning-related concerns to improve the quality of India's elementary education system, and increase learning levels across the country.

In what follows, we outline some of the key elements of a quality framework for education, keeping in mind the various opportunities and challenges at the last-mile service delivery level. A framework for mainstreaming quality in education, we recommend, should

begin with defining 'quality' and identifying the objectives of learning on the one hand, and developing mechanisms to evaluate performance of states, districts, schools, and students against these goals on the other. But measuring performance is useful only insofar as it contributes to effective quality management. For this, the high-level institutional accountability and governance framework must be complemented by greater operational autonomy to the last-mile service provider. It is imperative to focus on this last mile transaction – between the school, teacher, and student – and the various new stakeholders in this market, because this is the point where goals are eventually translated into outcomes.

The Pillars of the Framework

Defining Quality

While quality is largely a nebulous term that is open to a variety of interpretations, one thing is clear from the experiences over the past ten years: quality must be seen in terms of measurable outcomes and achievements in learning, and not merely as a function of inputs, as it has so far. In this regard, the objectives laid out by UNESCO, the Learning Metrics Task Force, and the United Nations Education for All agenda, provide useful starting points for how we should be thinking about the overarching objectives of quality education.

The Learning Metrics Task Force, for instance, suggests seven domains at the early childhood, primary, and post-primary levels: physical well-being, culture and arts, social and emotional, literacy and communication; learning approaches and cognition; numeracy and mathematics; science and technology. Additionally, several stakeholders and researchers in the field have similarly put forth recommendations for what the goals of the education process should look like. Banerji and Chavan (2012) outline a set of desirable learning outcomes, which includes a range of skills that enable children to "learn how to learn" – skills for communication and expression, reading, writing, critical thinking, and problem solving.

Presently, the education system does not articulate goals and objectives for learning, but instead relies on a curriculum- and textbook-centered approach to guide teachers and schools about what is expected of them. This causes teachers to define their roles primarily in terms of the syllabi, and they reveal that they are constantly racing against time to complete the prescribed curriculum.

While such an approach ignores some crucial learning domains highlighted above, researchers also find that curricula are often directed at the top performers in the classroom, and are generally too ambitious for the majority of students. Pritchett and Beatty (2012) attribute shallow learning profiles in several developing countries to "curricular paces

moving much faster than the pace of learning." They cite data for Himachal Pradesh, Rajasthan, and Andhra Pradesh to highlight the gap between curriculum expectations and student ability. In the case of Andhra Pradesh, for instance, less than a tenth of the students can understand a sentence with a fraction, and only a quarter can multiply a simple fraction by a whole number. But the curriculum expects that children understand percentages, multiply and divide fractions, solve problems with length and weight, and use decimals. Ultimately, they write: "An overambitious curriculum causes more and more students [to] get left behind early and stay behind forever."

Consequently, while education goals and objectives should be ambitious if we want our students to be able to participate in a competitive global economic environment, overambitious goals may end up being counterproductive. In addition, given the vast divergences in learning levels within a single classroom, experts also suggest that learning objectives be determined not according to grade-level, but based on where children are on the learning curve.

It is even more critical that we transition from the current curriculum-based approach to identifying education goals, to setting broad objectives for what students should be expected to know and learn – including elements such as physical, emotional, and social well-being that would allow children to emerge as well-adjusted members of society.

Apart from defining quality and laying out the goals of education, it is crucial that such objectives are clearly and simply articulated, and effectively communicated to all stakeholders at every level of the education apparatus. Articulating these goals in such a way is crucial because it provides a standard for the myriad actors in education system to work towards, and specifies the goals towards which schools, teachers, and the state will be held accountable to.

Measuring Outcomes

A necessary complement to goals and standards for education are mechanisms for testing and measuring performance against these standards. Such measurement of learning outcomes provides data on the health of the education system, shedding light on the progress being made at the macro and micro levels by individual students, teachers, and schools, as well as districts, states, and the nation as a whole.

There are significant flaws in the current institutional mechanisms to test student learning, and it is perhaps telling that the majority of stakeholders in the education sector regard data from non-government sources such as ASER as the most reliable measures of learning levels across the country.

The Sarva Shiksha Abhiyan (SSA), as Pritchett (2014) writes, has failed to create regular, reliable reporting mechanisms on learning that could be used to know whether education has improved at all. The RTE on the other hand, Banerji and Chavan (2012) note, has made education policy increasingly anti assessment, viewing any testing as being student-unfriendly.

The current system relies primarily on the Continuous Comprehensive Evaluations (CCE) conducted by class teachers (mandated by the RTE), and standardized tests in the form of the National Achievement Surveys (NAS) in Grade III, V, and VIII (introduced by the SSA). While the CCE is a good concept in theory, it is hindered by several hurdles in at the implementation-level, owing to the lack of guidelines and varied implementation across states. Critics point out that this system was introduced suddenly, without the necessary preparation and training of schools and teachers. Consequently, reports and surveys reveal that the CCE system is not fully understood and appreciated by 67 percent of teachers and is opposed by nearly 50 percent (The Hindu).

On the other hand, the NAS is essentially a written examination, which requires students to read and answer questions. Chavan (2014) questions the suitability of such tests, given that nearly 65 percent of third-graders and 35 percent fifth-graders are unable to even read words. The NAS also measures learning only in public schools, while private schools, which are becoming an increasingly important part of the system, are not covered. There are also accountability concerns regarding NAS results, and critics have questioned its reliability due to the absence of monitoring and evaluation of testing. Finally, there is a significant time-lag (of two-three years for the most recent NAS survey, for instance) between when the survey is conducted and when its results become available.

Ultimately, the challenge is to develop testing tools that – as Muralidharan (2013) helpfully frames it – are seen as being for learning, as opposed to of learning. Such testing should be independent of text-books and should provide information on the health of the education system as a whole, and test if students have been able to grasp concepts.

Creating a loop between objectives and evaluation

Testing, however, must not happen for its own sake, or to merely know what the learning levels in the country are. It is crucial that the results of such testing feed back into the education process, and are utilized to nudge the system in a direction of continuous quality management. Aaron Benavot, Director of the Education for All Global Monitoring Report, emphasises that national assessments should be scientifically rigourous and useful, and in addition to be being carefully designed and administered, they should try and answer the questions school leaders and teachers might have. Ultimately, “They should provide relevant feedback and direction as to how to improve teaching styles and the quality of student experiences.”

The Learning Metrics Task Force reiterates these objectives, and explains the need for measurement of learning outcomes to be pervasive. But more importantly, it points to how metrics should loop back into the education process in order to improve its overall quality:

> *Effective teachers measure learning in the classroom to adjust and individualize instruction. Head teachers, school administrators and school district leaders measure learning to target resources and improve school quality. Many national governments also measure learning to diagnose the overall health of their education systems and develop policies to improve the teaching and learning process and ultimately student learning outcomes. Civil society actors, donors and development agencies use assessments to measure the effectiveness of programming and advocate for effective education policies and practices.*

What this portends is the need for a policy environment that incentivizes – and holds stakeholders accountable for – outcomes-based quality improvements at every level of the education process. For instance, head teachers and school administrators must be incentivized to improve their schools' performance metrics, while elected political leaders should be committed to improving the education outcomes in their districts and constituencies.

Schools and teachers need to operate within an environment that demands that they continuously improve the quality of their service and learning outcomes of their students. The institutional framework of setting goals which schools can be held accountable to, and then measuring their performance against these goals provides a starting point to create such an environment.

The next step is to make data on learning outcomes publically available to all relevant stakeholders – including school leaders and teachers, but also parents, civil society organizations, funders, political leaders, and bureaucrats – in understandable formats. Teachers and schools should be able to use this information to improve learning levels in their classrooms, whereas other stakeholders should use this information to gauge the performance of the school system.

The Australian government's My School portal makes data on quality and outcomes publicly available, and provides an example of how such a system might work in practice. The portal provides data on the performance of nearly 10,000 schools across the country, with information ranging from attendance rates, teacher numbers, utilization of resources, and performance on tests. It also allows for comparison on these metrics with statistically similar schools.

If utilized well, such databases and systems allow schools to compete with each other to provide higher levels of learning, and also provide information on cities, schools, and

districts that need government and non-government intervention to improve outcomes. But ultimately, while there are benefits of making test scores and performance indicators public, it has been implicit in our discussion that at the heart of this system-wide transition towards quality management lies the quality of the pedagogic process within a single classroom. It is crucial to balance macro-level testing with classroom assessments, so that teachers can monitor their students' progress and take corrective measures as needed (World Bank, 2014).

This depends as much on the overarching macro-level quality framework, as it does on the ability and inclination of teachers and schools to individualize and customize the teaching process, to improve learning levels. This makes understanding the transaction at the last-mile – and identifying the challenges and scaling opportunities that lie therein – particularly crucial.

Empowering the Last Mile

Any conversation on the broad macro-level policy for education must therefore be grounded in a thorough understanding of the transaction that occurs at the last-mile – between the student and the service provider. It is through a series of such individual transactions across the system that education goals can be translated into outcomes.

Conversations with several such last-mile service provides – ranging from teachers, school leaders, social innovators, and non-government organizations – however, reveal that their understanding of ground realities is scarcely taken into account while framing education policy, and if anything their agency is violated by a centralized, top-down approach. In the government school system, Principals and School Leaders complain about being little more than "rubberstamps" and reporting authorities, with limited disciplinary powers, unable to even hire and fire teachers.

The World Bank (2014), studying school systems across South Asia, finds that the decisions – ranging from teacher recruitment and training to curricula and textbooks – that might have an impact on school quality rarely fall within the purview of individual schools themselves, and are taken instead by "entities too far from individual schools":

> *In India such decisions are made at the state level; in Bangladesh at the central level; in Sri Lanka at the central and provincial levels; and in Pakistan at the provincial or district level, depending on the province. Looking at teacher recruitment, there appears to be little in the policies of these countries that allows schools to find teachers who match their specific needs. For instance, in Sri Lanka teacher hiring takes place at the central and provincial level, and in Bangladesh at the primary level districts and sub-district articulate their needs in terms of numbers and subjects taught, but recruitment is done centrally.*

Such an administrative structure, characterized by limited agency to individual schools, is exactly the opposite of what is needed for an education system as extensive and diverse as India's. Pritchett (2014) eloquently makes the case for a more decentralized system where grassroots bodies and stakeholders are given greater power to oversee and support the functioning of service provides. He defines pedagogy and student-engagement as a "thick" activity – one that is essentially implementation-heavy, requiring "teachers to engage with students day to day (and minute to minute) in ways that are difficult to script in advance and impossible to monitor using 'thin' information."

But in the current system, not only to do they have limited authority, teachers and schools are also swamped with large classrooms with students of diverse learning levels and backgrounds, and overambitious curricula that they must complete within a prescribed time. In such a context, it is almost unreasonable to expect schools systems to be able or motivated enough to innovate and individualize pedagogy to improve learning outcomes. It is perhaps against this backdrop that endeavors like the CBSE's CCE – despite their underlying intentions – are ultimately seen as laborious and administrative tasks, instead of those that are closely linked to the quality management process.

While school leaders and teachers are disempowered, local regulatory agents and stakeholders are similarly unable to effectively monitor, evaluate, and support teachers and schools. For instance, the RTE mandated the constitution of School Management Committees (SMCs) – comprising parents, teachers, school leaders, and community members – in every government school, to monitor the school, manage disbursement and utilization of school grants, and create school development plans. However, these SMCs seldom have the capacity to influence decision-making. Parents are often unaware of this mandate, causing their involvement and engagement with these committees to be low. Similarly, bodies such as SMCs are given low-stakes tasks like managing enrollment drives and civil works, instead of monitoring pedagogic processes and learning outcomes. The typical SMC in India, the World Bank (2014) finds, is not empowered to hire and fire teachers, adding that, "For SMCs to make meaningful contributions, they need to be assigned roles and responsibilities they have been trained to undertake."

As quality and outcomes are accorded greater importance in the elementary education system, and teachers and school leaders are empowered to customize the education process to facilitate pedagogy of higher quality, local stakeholders such as SMCs and parents must similarly be trained and supported to serve as ground-level regulators of the school system and enforcers of education policy.

New Access Points and Stakeholders

While we look at empowering last-mile service providers so that the quality of the pedagogic transaction within schools and classrooms may be improved, this process must be accompanied by – and based on – a thorough understanding of the changing dynamics of the last mile market, which has over the years witnessed new access points and stakeholders, including private schools, supplementary education providers, and several NGOs, private players, and philanthropists involved directly in filling gaps in the education service delivery process. Recognizing the importance of these new actors is crucial for two reasons – first, if quality and greater learning levels are the goal, they must be made possible through all points of access in the education system. Second, several of these access points and stakeholders have become prominent organically, because they have been able to successfully address gaps in the service delivery process. Their experiences thereby provide opportunities for markets deficiencies to be addressed on a larger scale. The government must recognize the importance of these new actors, develop mechanisms to leverage their experience and expertise, and shed its "within the government system or not" approach to the education market.

Private Education

There are three key trends as far as the private education in India is concerned: first, enrollment in private schools in rural India has increased from 18.7 percent in 2006 to 30.8 percent in 2014 (ASER 2014). The government has been losing enrolment share at the rate of 2.5 percent per year, and private schools are expected to account for well over 50 percent of the education market by 2030, limiting government schools with just 33 percent share (Dhawan, et al, 2014). Second, learning levels in private schools appear to be higher than in government schools. And third, this learning gap has been increasing over time (ASER 2014). With private schools performing better than government schools on learning outcomes, experts (see Shah and Miranda) have made the case for vouchers to restructure incentives in the sector, by empowering parents to choose schools and influence their quality. This would make the education market more competitive and all schools – public and private – would have to raise their quality standards to meet the demands of their consumers.

Apart from raising quality standards through increased competition, with private education accounting for such a large part of the education market, Dhawan, et al (2014) point out that India is uniquely poised to take advantage of partnerships between the government and the private sector in providing access to education. Ernst and Young (2012) lists some avenues for the private sector to participate in improving the quality of education in government schools, including leadership, management, teachers' training, and capacity development and management. They also recommend private schools with good track record adopting at least one school to facilitate the transfer of knowledge.

Public Private Partnerships in education are of course an important avenue for the private sector and the government to collaborate to increase investments and capacity, and broaden the skill base of the education sector (Planning Commission, 2012). But while enrolment and outcomes in private schools is increasing, there are some challenges pertaining to private education that need to be addressed. There are significant regulatory and bureaucratic hurdles, with a multiplicity of regulators and licensing agencies, at both the centre and state levels. In addition, the Right to Education Act's stringent infrastructure and input norms have imposed limitations on several private schools. In the area of Public Private Partnerships in particular, there is an absence of coordination between policies of the Central and State governments, and changes in administrations cause the enforcement of contracts and agreements to be unpredictable.

A Planning Commission report on private investment in the education space reiterates these concerns, and lists some other constraints in the area of management, operations, and finance. In terms of the former, the lack of management capacity within government prevents the efficient management of design, implementation, and evaluation processes. As for the latter, there are insufficient instruments to meet long-term equity and debt financing (Planning Commission, 2012).

If measured in terms of learning levels, private schools have broadly demonstrated an ability to provide quality education. Given this, the government must seek to develop policies that facilitate their enhanced participation in providing access to quality education. But private schools are a heterogeneous category that includes a range of schools – religious and secular, and low-cost and high-end elite schools. Quality and outcomes vary across these schools, so there is a need to establish standards and norms. We suggest these norms be primarily outcome-based. In addition, it is key that these outcome-based norms are uniformly applied to public and private schools. Shah (2014) writes: "Apply the same standards to private and government schools. According to the law, government schools must meet the same norms as private schools, but this may or may not happen in practice since the law does not require that a government school be closed down or penalised for failing to meet the norms."

Supplementary Education

The Ministry of Human Resource Development's framework currently classifies schools in India as those run by the central and state governments and municipal bodies; aided schools run by private institutions, which receive aid from the government of up to 95 percent of teacher salaries; and private schools that charge fees from students. Notable by its absence is the remedial education and private tuitions market, whose prominence has

been increasing. According to the 2014 NAS report, approximately, 30 percent students in III grade, and 33 percent students in VIII grade took private tuitions. In states like West Bengal, Odisha, and Jharkhand, this number is even higher – at 77, 56, and 49 percent respectively.

While the motivations for taking private tuitions are unclear, studies find that they have a positive impact on learning outcomes. The NAS report for VIII grade (2014) finds that students taking tuitions generally perform better than those that don't, and that the difference is statistically significant. Similarly, Dongre and Tewary (2014) find that private tuitions have a "positive and significant effect" on learning outcomes for children in lower and upper primary school, and "this effect is equivalent to an additional year of schooling or being in a private school instead of a government school."

In a perfect market, there would be no need for remedial education, but in light of overambitious curricula and rising inequalities within the classroom discussed previously in this paper, many students are forced to bridge the learning gap through tuitions. Remedial education is also of value for first-generation learners, who might not have the support that their peers from educated families have at home and need extra attention to bridge learning inequalities. This has caused the remedial education market to emerge as a necessary complement to the mainstream system. The World Bank (2014) concludes that supplemental instruction programs can improve both equity (by helping students catch up) and efficiency (by making teachers more effective by reducing variance in student learning levels).

There is a wide range of supplementary tutoring available, but the space can broadly be categorized into two types. The first is the unregulated coaching classes provided by local community teachers. The quality of teaching here is uncertain, depending on the individual motivation and incentives of the teacher. The second type of supplementary education is a new but rapidly growing one that includes monitored classrooms run by NGOs or social enterprises, aided by technology or researched pedagogy. Clearly, there are wide discrepancies and differences in how each of these types of supplementary education systems work, particularly in terms of quality. These differences stem largely from a lack of a regulatory framework, and the absence of this segment of schooling in the MHRD's classification and governance apparatus for schools.

The government should proactively include supplementary learning as an extension to in-school learning. Supplementary learning as a phenomenon has become increasingly prevalent worldwide, and several countries have recognized private tuitions and remedial education as a necessary reality – and often a social good – and subsequently developed regulations and standards for service providers.

In the Republic of Korea, the demand for *hagwon* and private tuitions emerged from a want for better education than available in schools. While the government allows the private tutoring market to function freely on a "survival of the fittest" model, it has also tried to meet the demand for supplemental education on site in schools: schools design curriculums and hire teachers from within or outside, and charge a small tuition fee from students who participate in the program. Schools are free to engage with a range of institutions – including for-profit organizations and external tutoring institutions – in running this program.

So in effect, the Korean system allows students who are dissatisfied with the school system, access to private tutoring, and also makes supplemental learning available on site, in part to address the inequality in access to private tutoring.

Other countries have also developed standards to regulate the activity and quality of supplementary education providers. The Australian Tutoring Association (ATA) has a fairly comprehensive and sophisticated code of conduct that its members must adhere to, which includes a provision for sanctions, and several outcome and quality-related factors. Serving as an accreditation agency, members of the ATA may display its logo, which is seen as a badge of honor. Similarly, in the United States, the *No Child Left Behind Act* of 2001 took significant steps in mainstreaming and regulating the role of Supplemental Education Services (SES). These services offer poor students additional help in subjects, outside the regular school day, and for free

In India, Bihar became the first state to regulate the supplementary education space when it passed the Bihar Coaching Institute (Control and Regulation) Bill, 2010, in response to protests by students. According to this legislation, coaching centers serving more than ten students must register for three-year renewable licenses, and must publish their course structures, fees, and tutors' qualifications and experiences.

Other states should follow this example, but seeing as the objective of private tuitions is to address learning deficiencies and increase outcomes, regulations should also include outcomes- and process-based conditions for the granting and renewal of licenses. The regulatory mechanism for the SES, for instance, imposes standards of quality and outcomes. For instance, while renewing or withdrawing an SES providers' approvals, states examine if the providers have contributed to increasing the students' academic proficiency, have addressed individual student needs as described in their plans, and are aligned with the state's academic content and student academic achievement standards.

Support and Scale Innovations

The big transformation in the education sector has been the proliferation of innovations spearheaded by "edu-preneurs" and NGOs, who have been able to develop products and services to fill the large void between high-level policy making and the last-mile market. These innovations include a wide variety of products, including adaptive learning platforms such as Mindspark and Zaya, grassroots advocacy bodies like Saajha, and remedial centers run by NGOs such as Pratham, that address different needs of the education service-delivery process.

Due to the absence of a regulatory and information-sharing mechanism in this area, however, the social enterprise sector is rapidly becoming a network of cottage industries with a multitude of micro-innovations, each operating within a single school, neighborhood, or town. Time, funds, and imagination are poured into new programs that at best reinvent the wheel, while the potential of programs that have already proven their effectiveness remains sadly underdeveloped.

Such initiatives provide opportunities for the education system to scale best practices. As President Bill Clinton noted while reviewing school reform initiatives during his presidency: "Nearly every problem has been solved by someone, somewhere. The frustration is that we can't seem to replicate [those solutions] anywhere else." Replicating or adapting micro-innovations on a large-scale requires policy support, social capital, and a facilitative environment to test-implement. In addition, government support is critical as for solutions to be designed for scale, entrepreneurs have to root themselves in the government school classroom and invest in outreach with government officials, teachers, low-income students and the community.

Eventually, there is a need to leverage the experiences of those on the ground, who have the ability to witness, understand, adapt, and respond to the challenges of service delivery and directly impact the pedagogic process. Empowering such last-mile agents – both within and outside the traditional education system – is crucial in making quality education possible. Within the traditional school system, teachers and schools must be given greater autonomy to manage the service delivery process, and to adapt and respond to the needs of students. Beyond the traditional school system, the experiences and expertise of private and supplementary education providers, and education innovators, offer unique opportunities to strengthen the arm of the government in providing quality education to increase learning outcomes across the country. The raison d'être for the innovations and changes at the last-mile level – whether within or outside the government school system – is their ability to understand and respond to market needs, and ameliorate gaps in the service delivery. Given this, it is key that the government redefines its role in the education system as a

facilitator of quality education instead of a service provider. A regulatory infrastructure is imperative to ensure high quality and standards from all access points, but eventually, these regulations should be enabling as opposed to restricting.
If learning outcomes need to be improved for 135 billion children in difference districts, states, and education systems around the country, a 'one size fits all' model will be far from efficacious.

Overall, an efficacious quality framework should create measurable outcome-based quality standards for all education service providers, decentralize autonomy to the last-mile level, and recognize the importance of new access points and stakeholders in the sector to ensure high learning levels throughout the country.

Conclusion

It is almost universally acknowledged at this point that our education system needs to move towards a learning-outcome focus. Such a nudge (a push, actually) requires a macro-level institutional framework to work in tandem with a bottoms-up approach to innovation in service delivery. An effective quality framework will balance the institutional pillars for quality learning with an understanding of ground realities and greater agency to service providers.

The institutional pillars include first, defining quality in terms of learning outcomes and then, developing testing mechanisms to assess achievement. But goals and testing are all exercises in futility unless they help manage the quality of education. It is crucial to recognize that the goal of such assessment is not to test students, but to test and improve the quality of education in the country. This portends the need for assessments to feed back into the service delivery process at all levels – national, regional, state, district, school, and classroom.

The process of education or the transaction between the student and teacher becomes the focus, because this is where goals are translated into outcomes. Consequently, this broad institutional framework must be rooted in an understanding of the process or transaction of education that happens at the last mile. Stakeholders at the last-mile level that have the ability to witness the pedagogic process in action should have the autonomy and the ability to govern and monitor it. This includes not just teachers and school administrators, but also local NGOs, parents, parent teacher associations, and school management committees. Each of these stakeholders is uniquely poised to hold the larger education system accountable and demand better pedagogy and processes within the classroom.
The last-mile has also undergone a variety of changes, particularly the entry of new access

points and stakeholders. These present both opportunities and challenges, and it is crucial that the government create adequate mechanisms to support innovations that have been successful in improving learning outcomes on the ground. Scaling and replicating such innovations that have proven their efficiency in niche markets on a larger-scale will enable the acceleration of high quality education across the country. The government's role in the education sector must then transition from being the primary provider to being a facilitator and regulator of such innovations.

Finally, the importance of communication at and to all levels – to circle the loop between education goals, testing, and quality management – cannot be understated. It is crucial to establish a continuous communications process with the vast and diverse education sector. The Prime Minister's address to the school system on Teachers Day, 2014 established a first line of communications with stakeholders in the space. This was a welcome first step to create a "community" of stakeholders in the education process, but this must not be a one-time event. The next step should be to utilize this as a platform to take stock of education outcomes, and convey the objectives and goals in a clear and concise manner. Such an address could well be an annual exercise, which aims to reinforce the goals of the sector and evaluate the performance against these goals – a *"State of Education Address."* These also serve as valuable ways to enable teachers and last-mile providers to understand the larger context within which education policies are situated and help draw them in as participants.

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2

Quality

CHAPTER ONE

Defining Universal Learning Aims: Lessons from the Learning Metrics Task Force

Kate Anderson

Introduction

The inclusion of learning outcomes and equity in the Sustainable Development Goals (SDGs) and the post-2015 Education for All agenda has sparked widespread demand for better measurement of learning outcomes globally. This can help catalyse stronger global action towards ensuring that children acquire the knowledge and skills they need to be productive citizens in their communities and the world.

However, by focusing on globally agreed goals and learning outcomes, the important societal, linguistic, and cultural aspects of education can be compromised. Furthermore, learning outcomes are only relevant insofar as they enable learners to be successful in life and livelihood, which is highly dependent on the village, city, state, and country where they live. Many large-scale assessments of learning, while providing useful data for international agencies and researchers, have little to no impact on policy and practice at the national level.

How might we propose a way forward that is both reflective of India's national (and sub-national) education needs, but responsive to the demands of a globalized world? This paper describes the recommendations of Learning Metrics Task Force (LMTF), a global effort which sought to engage

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teachers, academics, governments, donors, NGOs, and UN agencies in a dialogue on what learning is universally important and how it should be measured. It also describes how 15 "Learning Champion" countries have begun adapting these recommendations to their national contexts. Finally, it presents recommendations for how India can address the local-global tension in its education system.

Defining Learning

The task force, comprised of representatives from UN agencies, regional organizations, national governments, teachers organizations, bilateral donors and civil society organizations, aimed to address three essential questions:

Phase 1: What learning is important for all children and youth?

Phase 2: How should learning outcomes be measured?

Phase 3: How can measurement of learning improve education quality?

Throughout an 18-month-long consultative and collaborative process, the LMTF collected feedback from 30 member organizations, 168 technical experts, and more than 1,700 consultation participants from 118 countries (two-thirds of whom are from the global south). This inclusive and transparent process was essential to put together a set of global recommendations on how to measure and improve learning outcomes that were acceptable to a wide range of national stakeholders in low, middle, and high-income countries, as well as international actors (LMTF 2013a).

The task force developed "A Global Framework of Learning Domains" that proposes seven domains and more than 100 corresponding subdomains of learning outcomes that are important for all children and youth around the world (See Figure 1). The framework focuses on three educational stages: early childhood (birth through primary school entry), primary (start of primary through end of lower secondary) and post-primary (end of primary through end of lower secondary), acknowledging that some domains can be more relevant than others in each stage. It further suggests that the development or competency in a given area expands as a child moves from one stage to the next and can continue in later formal or non-formal education opportunities in life. This holistic framework of learning domains was devel–oped based on:

- Existing global policies and dialogues, such as EFA and the UN Convention on the Rights of the Child, which mandate a broad definition of education and learning.
- Research supporting the importance of learning in these domains for different areas of people's lives, including economic growth and material prosperity.
- Results from the first of three LMTF global public consultations, in whichmore than 500 individuals in 57 countries provided feedback. The overwhelming majority of

participants in the global consultation, especially those from the Global South, argued for a broad definition of learn-ing that goes beyond basic literacy and numeracy (LMTF 2013a).

Unlike most existing national and international assessments, this framework goes well beyond numeracy and literacy. While critical for national development (Hanushek 2008), numeracy and literacy are insufficient to meet the right to education (Right to Education, 2012) or the demands of an interconnected, fast-paced global economy (Partnership for

Fig 1: LMTF Global Framework of Learning Domains.

21st Century Skills, 2007). Thus, a comprehensive approach to learning was adopted to fulfil the aspiration of preparing children and youth for healthy lives, civic participation, and productive work.

Each arrow in Figure 1 represents one domain of learning, radiating outward as a child expands his or her development or competency in a given area. The half circles represent three stages in which the task force will concentrate its recommendations: early childhood (birth through primary school entry); primary, and post-primary (end of primary through end of lower secondary). The arrows extend outward beyond the diagram to indicate that an individual may continue learning more deeply in a given area at the upper secondary, tertiary, or technical/vocational level or through non-formal learning opportunities. The seven domains of learning are described below.

1. ***Physical Well-Being:*** Physical well-being refers to how children and youth use their bodies, develop motor control, and understand and exhibit appropriate nutrition, exercise, hygiene and safety practices. For older children and adolescents, the domain of physical wellbeing refers to the knowledge that individuals need to learn to ensure their own health and well-being, as well as that of their families and communities.
2. ***Social and Emotional Competencies:*** Social development refers to how children and youth foster and maintain relationships with adults and peers. It also encompasses how they perceive themselves in relation to others. Emotional development is closely

linked and refers to how children and youth understand and regulate their behaviour and emotions. This domain also includes aspects of personality and other social skills, including communication and development of acceptable values that are important as children and youth develop both cognitive and non-cognitive skills.

3. ***Culture and the Arts:*** The arts in the realm of education are often described as creative arts expression, and can include activities from the areas of music, theatre, dance or creative movement, and the visual, media and literary arts. The foundation for learning in history and social science is built on children's cultural experiences in their families, school, community and country.
4. ***Literacy and Communication:*** The domain of literacy and communication includes those skills required to communicate in the primary language(s) of the society in which the child lives as well as beginning skills that enable children to both communicate and gain knowledge through the written word.
5. ***Learning Approaches and Cognition:*** Learning approaches and cognition refers to engagement, motivation, and participation in learning. It has been defined as the ability to take initiative, solve problems that come up in work and play, make use of available resources and reflect on experiences. Learning approaches include many of the skills considered "executive functioning," which refers to inhibitory control, working memory and the ability to organize, plan and reflect on one's learning. Cognition is described as the mechanics of thinking and processing information. More specific processes include reasoning, inferring, problem solving, classifying, relating, creating, generating plans and strategies, conceptualizing and thinking.
6. ***Numeracy and Mathematics:*** Mathematics is a quantitative language used universally to represent phenomena observed in the environment. Numeracy and mathematics in early childhood include number sense and related mathematical skills, such as operations, spatial sense and geometry, and patterns and classification. In primary school, children typically learn concepts related to numbers, operations, geometry and patterns, and they apply their knowledge of mathematics to solve problems. In the post-primary years, the domain of numeracy and mathematics refers to the ability of individuals to use quantitative ideas to understand the world around them and make informed financial and life choices.
7. ***Science and Technology:*** Science can be defined as specific knowledge or a body or system of knowledge covering physical laws and general truths. Children and youth move from spontaneous knowledge gained in their natural environments to scientific knowledge gained through formal schooling. Technology refers to the creation and usage of tools used to solve problems. It includes physical technology (such as machines), the application of methods or systems and computer-based solutions.

Each of the seven domains contains subdomains in three levels: early childhood, primary, and post-primary. In the initial round of consultations, the working group proposed standards or "illustrative outcomes," such as "Shows beginning knowledge of the primary

Table 1: LMTF Global Framework of Domains and Corresponding Subdomains

	Early Childhood	Primary	Lower Secondary
Physical Well-Being	Physical health & nutrition, Health knowledge & practice Safety knowledge & practice, Gross, fine, and perceptual motor	Physical health & hygiene, Food & nutrition, Physical activity, Sexual health	Health & hygiene, Sexual & reproductive health, Illness & disease prevention
Social & Emotional	Self-regulation, Emotional awareness, Self-concept & efficacy, Empathy,Social relationships & behaviours Conflict resolution Moral values	Social & community values,Civic values Mental health & well-being	Social awareness, Leadership, Civic engagement, Positive view of self & others Resilience/"grit" Moral & ethical values Social sciences
Culture & the Arts	Creative arts, Self- & community-identity Awareness of & respect for diversity	Creative arts Cultural knowledge	Creative arts Cultural studies
Literacy & Communi -cation	Receptive language Expressive language Vocabulary, Print awareness	Oral fluency, Oral comprehension, Reading fluency, Reading comprehension, Receptive vocabulary Expressive vocabulary Written expression/ composition	Speaking & listening Writing, Reading
Learning Approaches & Cognition	Curiosity & engagement Persistence & attention Autonomy & initiative Cooperation, Reasoning & problem solving, Early critical thinking skills Symbolic representation	Persistence & attention,Cooperation Autonomy, Knowledge Comprehension, Application, Critical thinking	Collaboration, Self-direction, Learning orientation, Persistence,Problem solving, Critical decision-making Flexibility,Creativity
Numeracy & Mathematics	Number sense & operations,Spatial sense & geometry, Patterns & classification Measurement & comparison	Number concepts & operations,Geometry & patterns, Mathematics application	Numbers, Algebra Geometry, Everyday calculations, Personal finance, Informed consumer,Data & statistics
Science & Technology	Enquiry skills, Awareness of the natural & physical world, Technology awareness	Scientific inquiry, Life science,Physical science,Earth science Awareness & use of digital technology	Biology, Chemistry Physics, Earth science, Scientific approaches Environmental awareness, Digital learning

written language(s) of communication." However, feedback from the consultation indicated that these illustrative outcomes were not possible to define at a global level and should instead be defined at the national level. The corresponding subdomains are listed below, and the full rationale and description of the domains and subdomains is available in the LMTF publication, Toward Universal Learning: What Every Child Should Learn.

Measuring the Seven Domains

While all of the LMTF domains and subdomains can be measured, not all are currently measured in a large-scale, standardized way. Indeed, it is not necessary or desirable to assess the outcomes of every learner in all domains—this could seriously detract from time spent in teaching and learning activities. Given the need for a succinct set of measurable learning outcomes at the global level, the task force proposed a hybrid model with a small number of subdomains to be measured at the global level, a larger set at the national level (determined by national stakeholders), and an even larger and more tailored set of outcomes at the local and classroom levels. The important feature of this hybrid model is

Table 2

Areas of Measurement	Description of Indicators
Learning for All	Combine measures of completion and learning (reading and numeracy proficiency at the end of primary school) into one indicator.
Age and Education Matter for Learning	Measure timely entry, progression and completion of schooling, and population-based indicators to capture those who do not enter or those who leave school early.
Reading	Measure foundational skills by Grade 3 and proficiency by the end of primary school.
Numeracy	Measure basic skills by end of primary and proficiency by lower secondary school.
Ready to Learn	Measure acceptable levels of early learning and development across a subset of domains by the time a child enters primary school.
Citizen of the World	Measure among youth the demonstration of values and skills necessary for success in their communities, countries and the world.
Breadth of Learning Opportunities	Track exposure to learning opportunities across all seven domains of learning.

alignment, so that what is being measured globally is in most countries a subset of national measurement, not an additional reporting burden.
The LMTF reviewed existing assessment tools and conducted its second phase of consultations to identify the following seven areas of measurement that are trackable at the global level.
These measurement areas do not correspond directly with the seven learning domains described above; some focus in on one or two subdomains (such as reading and numeracy), while others propose indicators which cut across multiple domains (such as readiness to learn and global citizenship education).

The "breadth of learning opportunities" is intended to measure the education system's provision of learning experiences across all domains, in order to supplement data on demonstrated student outcomes. Additionally, the task force recommended that access and completion ("age and education matter for learning") be included in the global measurement framework, to prevent unintended consequences of systems focusing on learning to the exclusion of educational access for the millions of children still not yet in school. The "learning for all" indicator is also intended to mitigate these risks, but focusing on how many children have both completed a cycle of education and achieved adequate learning outcomes.

Recognizing that meeting global demands for data requires multiple methods of assessment, the LMTF recommends a country-driven process to define learning outcomes and measures rather than a specific set of tools. The task force recommended that the participation of all stakeholders is crucial in developing and implementing a sustainable system of assessment that is linked to national needs (LMTF 2014). In many developing countries, there are significant resource gaps that prevent education stakeholders from implementing an efficient and useful educational assessment system.

The task force identified the following three key supports that are necessary for ensuring a successful learning measurement system: technical expertise, institutional capacity, and political will. Technical expertise is at the core of carrying out assessments; countries need technical experts within their education systems to implement large-scale assessments and provide guidelines for formative assessments. In addition to technical expertise, institutional capacity requires that stakeholders involved in measuring learning must develop institutional capacity to build a strong system for measuring learning, which requires strategic multi-sector collaboration. For a system to remain sustainable, political will is a crucial factor. Political support for sustaining investments in learning measurements and effectively translating data into practice will help efforts to consistently work to improve quality of learning.

Adapting LMTF Recommendations to National Contexts

In order to translate these recommendations into action at the country level, the task force invited governments and NGOs to apply as "Learning Champions" in 2014 to devise ways to adapt these recommendations to their national contexts, and to work together to develop innovative solutions to these measurement challenges. Several examples are described below.

Buenos Aires, Argentina: The City of Buenos Aires has focused its efforts on adapting the LMTF seven learning domains for secondary education. After more than 300 consultations with teachers, parents, students, and government officials, Buenos Aires adopted an eight domain framework for its recently approved secondary education curriculum. Buenos Aires has also introduced innovative measures to modernize the Teacher Training School of the City of Buenos Aires. These efforts specifically target Buenos Aires' low retention rates in secondary education and aim to enhance students' learning experiences in multiple domains.

Bogota, Colombia: The municipality of Bogota has developed new tools to assess three skills areas, which include a written test of citizenship skills and two observational assessments evaluating the following two areas: 1) art and citizenship skills and 2) physical fitness and citizenship skills. In its educational shift from "guaranteed rights" to schooling to "the right with quality," Bogota further defines quality by combining academic excellence with analytical skills, citizenship capabilities, physical and emotional well-being and aesthetic sensibility.

Pakistan: As a Learning Champion, Pakistan seeks to better coordinate the 17 national agencies and multiple non-governmental organizations working to assess learning. The Learning Champions, which include a consortium of national and provincial governments and NGOs, have a created a National Commission to coordinate these efforts and completed a plan that assigned one of each of the learning domains to a participating province. An assessment framework and tools for evaluating literacy and communication, mathematics and critical thinking were finalized in early 2015 and pilot testing began in mid-2015 in 13 districts.

Senegal: Senegal has focused its efforts on the development of continuous and formative assessment strategies for use in primary education. These tools and models are intended to help primary education teachers strengthen student learning in three focus areas, which include literacy, mathematics, and science. The Senegal Learning Champion initiative is piloting these tools in schools in the Dakar-Plateau education inspectorate, with the intent to pilot on a larger scale.

Policy Recommendations

India recognizes the need to shift the focus from enrolment rates to learning outcomes, as outlined in the Twelfth Five Year Plan. Highlighting the LMTF's global efforts on improving learning outcomes, it acknowledges India's urgent need to identify learning goals and play a leading role in ensuring that these standards for learning are implemented (Planning Commission, 2013). As stated before, the LMTF does not recommend a specific set of domains or tools to be measured in every country; rather, it offers a consultative process by which countries should engage national stakeholders in deciding a path forward.

1. ***Establish an inclusive process that involves critical stakeholders through national steering committees and/or communities of practice on assessment:*** Quality education and learning are the responsibility of all members of society. In addition to national education ministry participants, forming committees such as parent and student organizations, teachers' organizations, civil society organizations, academia, and private sector stakeholders will help engage dialogue and maintain the relevancy of the assessment system to the country and local context.
2. ***Strengthen collaboration and enhance information sharing practices:*** In order to ensure that the assessment system is internationally relevant and country-owned, countries and governmental units can benefit from collaboration, support and sharing information. All recommended products and services should be considered public goods. Before making tools, documentation and data accessible and freely available, quality assurance mechanisms should be in place to test the tools before they are in the public domain.
3. ***Develop or adapt measures for assessing learning and demonstrate commitment to use the data to improve learning:*** The highest-performing education systems focus on quality rather than quantity. Students, teachers, and schools receive constant feedback about what has been learnt and "feed forward" information that can shape future learning (Hammond, 2010). These systems also have an established subject and performance criteria and clear curriculum expectations, and link them to desired learning outcomes.

KEY POLICY INSIGHTS

While there is a global demand for determining what learning is important and how it should be measured, it is crucial that such goals and testing mechanisms be context-specific. Education goals should account for the important societal, linguistic, and cultural aspects of education. Similarly, learning outcomes are only relevant insofar as they enable learners to be successful in life and livelihood, which is highly dependent on the village, city, state, and country where they live.

The Learning Metrics Task Force (LMTF) provides a framework to address this local-global tension:

- *Seven domains of learning are critical for all children and youth, no matter where in the world they live: physical well-being, social and emotional competencies, culture and the arts, literacy and communication, learning approaches and cognition, numeracy and mathematics, and science and technology.*
- *A small number of learning outcomes can be tracked in every country in order to measure progress toward globally agreed goals, but the specific tools and methods must be decided upon by national stakeholders and meet the data needs of the country first and foremost.*
- *A successful learning measurement system requires technical expertise, institutional capacity, and political will. The focus should not only be on collecting data but on how the data are used to improve learning.*
- *The LMTF recommendations can be a useful framework for adapting to national contexts, and are currently being used in 15 countries to address learning challenges through various efforts including teacher education and professional development, curriculum reform, and developing or adopting new student learning assessments.*
- *LMTF urges India and other countries that recognize the need for a stronger focus on learning outcomes, to establish an inclusive process involving critical stakeholders, strengthen collaboration and enhance information sharing practices as well as develop measures for assessing learning and demonstrate a commitment to use data collected to improve learning.*

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CHAPTER TWO

Mechanisms for Large-Scale Learning Assessments

Vyjayanthi Sankar

Introduction

India's experience in the past two decades of economic reform and its subsequent take-off has shown that eradicating poverty and improving well-being requires economic growth more than good intentions (Bhagwati and Panagriya, 2013). Nations, as they shift from traditional manufacturing and service industries towards economies driven by knowledge and information are increasingly powered by a different set of skills of its workforce - the '21st century skills' - such as innovation, critical thinking, problem solving and learning to learn.

Such a highly-skilled work force raises the economic growth of a nation by about two-thirds of a percentage point every year, which is significant when one considers that worldwide, the average annual GDP growth rate for more than half a century is 2-3 percent (Hanushek et al. 2008). These indicate that the economic powers of this century will be nations, whose education systems focus on providing relevant knowledge and skills for all their students.

Prime Minister Modi, during his recent visit to China in 2015, spoke of India being at the next frontier of economic revolution, with the aspirations, energy, enterprise, and skills of 800 million people who are below the age of 35 years

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and the government's determination to make it happen (Deccan Chronicle, May 15, 2015). However, in order to achieve this vision, our youth needs to be equipped not only with literacy and numeracy, but also with the knowledge and skills relevant for the 21st century.

The Need for Large-Scale Learning Assessments

What does not get measured does not get done

There is an old saying, "what gets measured gets done". While this may not always be true, its converse – "what does not get measured does not get done" – is truer, as seen in our efforts to achieve education for all. India's focus on providing universal primary education as measured by enrolments, number of years in school, school for all habitations, bridging gender and social gaps, class sizes, budgets, etc. resulted in significant progress in improving access to school. However, despite this progress, we find that students are leaving school having learned very little. This has been the experience of many countries across the world. Systems where the measures of schooling track whether children are in seats give us measures of time served rather than learning gained (Pritchett, 2013).

To get a clear picture of 'where we stand' to understand 'where we want to go'

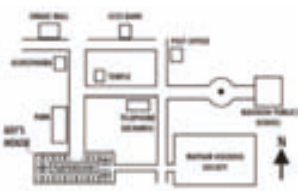
In our aspiration to provide quality education for all, it is essential to know two things about student learning – first, where we stand, and second, where we want to go. Well-designed diagnostic assessments that provide a clear picture of where we stand are integral to any learning strategy that leads us to where we want to go. Data in the public domain from independent learning assessments carried out in the last decade paints a dismal picture about our status of learning:

i. ***Extremely low learning levels:*** Nationally, about 47 percent of students in class 5 can read standard class 2 level text, and 26 percent of all children in class 5 were able to solve a three-digit by one-digit division. Typically, this kind of division problem is part of the class 3 or class 4 curriculum in most states (ASER 2013).

ii. ***Learning is 'apparent and not true':*** The core problem in India is rote learning; we cannot reform education or aim to improve the quality of student learning outcomes without tackling this problem. The term 'rote-based' is used here to indicate learning that checks procedural learning and relies largely on recall to answer them. Rote learning is problematic as it could pass off as 'true' learning. In systems where rote learning is prevalent, students may apparently be getting high marks and will be able to recall reams of facts and demonstrate routine skills without understanding their basis or when to use them. In contrast, a student may be said to have 'learnt with

understanding' or demonstrate 'true learning', when she/he is able to apply what is learnt in a different situation in real-life context; is able to solve real life problems; is able to restate learning in own words; is able to integrate learning from different sources/subjects as needed; and is able to answer questions phrased in a slightly different form.

Large-scale assessments by Educational Initiatives across government and 'top' private schools, show that while the overall levels of learning in the 'top' private school may be far higher than government school, this is more due to higher rigour for cramming or rote learning. While rote learning is not all that bad as one does learn procedure and facts, all learning being rote is bad. Students in India's 'top' schools are learning by rote and not with understanding, and cannot apply concepts, do practical competencies such as measurement, map reading, use good language while writing,

Sample 1	**Sample 2**
Which rational number does the pointer on the number line show?  A. -1.2 B. -0.4 C. 1.2 D. -0.8	Adi goes to Rainbow Public School, which is near his house. Given below is a map which shows both – his house and his school. Look at it carefully to answer the question.  *"Quality Education Study, 2012"* While going to school, Adi passes by the temple every day. In which direction is the temple located, with reference to Adi's house? A. North B. North East C. North West D. West
73.5% of students in class 8 in 'top' private schools in India chose the correct option D in comparison to 19.0% in government schools. This is a question that can be answered correctly if one learns the procedure. The question also is in a familiar format as seen in a textbook. Students who have been tutored to handle textbook problems will be able to answer this question correctly.	Only 30% of students in class 4 in 'top' private schools in India chose the correct option B. 23% of students selected the wrong option A. This could be because students associate upwards or forward direction with the cardinal direction north. 17% of students selected the wrong option C. These students might be confused between northwest and northeast. 12% of students chose the wrong option D. Most students probably do seem to understand cardinal and intermediate directions clearly.

[1] *'Top' schools are schools perceived by public as the best schools in their cities, and identified through a survey by Educational Initiatives in 2006.*

and have a number of misconceptions about what they have learnt.

The implication of India's low learning levels when coupled with the issue of rote learning is likely to have far reaching consequences for the nation in the 21st century, if not addressed with the urgency and attention it deserves.

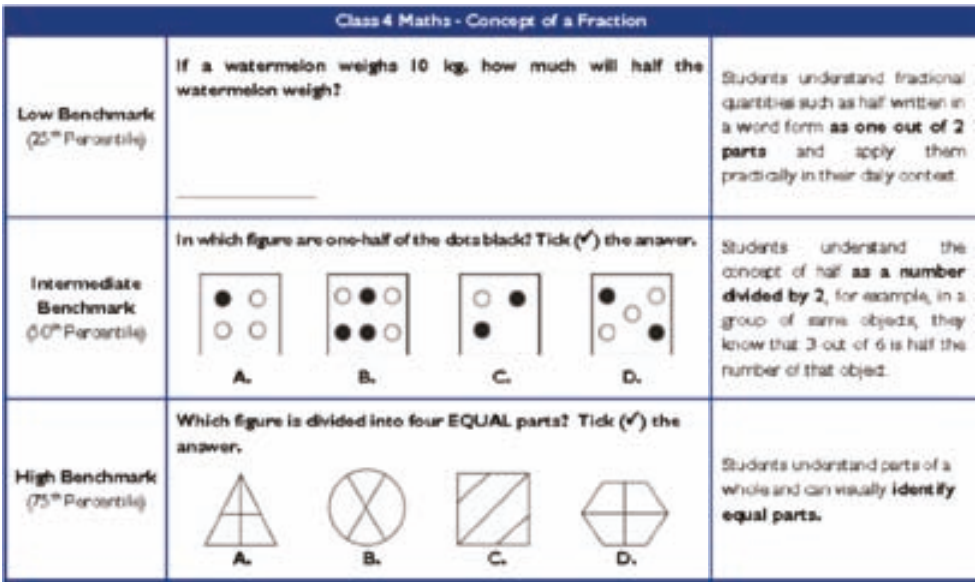
To initiate meaningful dialogue and remediation

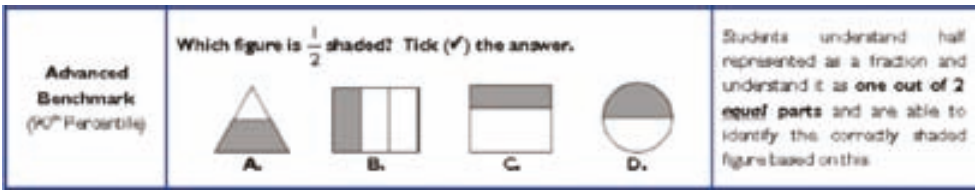
Assessments that diagnose learning issues are characterised by a fundamental shift in their approach from measuring 'how much' and 'how many' to include 'what' and 'how well'. While these assessments are not silver bullets, they do provide valuable supplementary data for improving quality of learning. For example, a policy maker needs to know about the strong and weak competencies of students in order to arrange appropriate training for teachers. Similarly, when a teacher gets to know that students find fractions difficult, it is useful information.

However, this information becomes even more useful, when the assessments show that the difficulty students face in fractions is because they know that fractions are parts of a whole, but not that the parts have to be equal.

Scientifically-collected data on student learning outcomes and gaps, thus enable stakeholders in the system to initiate a meaningful dialogue and target action to address the learning gaps.

Identification of patterns of learning which has relevance to curriculum and pedagogy





- Student Learning Study, 2010

To establish benchmarks of performance

Benchmarking student performance allows one to track progress against oneself with time and also vis à vis others. In an increasingly globalised world, wherein the economy and progress of a nation is intertwined with that of others, it is important to understand the absolute as well as the relative learning achievement gap, to plan for remediation and course correction. Establishing benchmarks also allows the sharing of best practices and learning from others to improve instruction. While national assessments provide the benchmarks for participating states, regional and global learning assessments benchmark the performance of nations.

Current Stand on Large-Scale Learning Assessments

Given the need for quality in learning outcomes across nations, the United Nations' post-2015 development agenda is likely to include a stronger focus on learning outcomes. Convened by the UNESCO Institute for Statistics and the Brookings Institution's Center for Universal Education, the Learning Metrics Task Force (LMTF) was launched in 2012 with the goal of catalysing a shift in the global education conversation from access to access plus learning. Towards this, the task force conducted a broad global consultation and came to consensus on a global framework of learning domains and measurement areas for global tracking. With the launch of LMTF 2.0 last year, the task force refocused its efforts with a new goal of supporting development of more robust systems for assessing learning outcomes (global, regional, national and local) and better use of assessment data to help improve learning outcomes across the seven domains of learning identified in LMTF 1.0.

Globally about 48 nations around the world participate in international assessments such as Trends in International Mathematics and Science Study (TIMSS) and Progress in Reading Literacy Study (PIRLS) carried out by IEA, while 70 nations participate in the OECD's Progress in International Student Achievement (PISA). 60 developing nations in the Global Partnership for Education (GPE) administer early grade reading assessments (EGRA).

There are many regional assessment initiatives in different parts of the world, such as the SACMEQ (Southern and Eastern Africa Consortium for Monitoring Educational Quality),

the LLECE (Latin American Laboratory for Assessment of the Quality of Education), the PASEC (Programme for the Analysis of Education Systems of Confeman). New initiatives such as the READ (Russian Education Aid for Development) along with World Bank initiatives for its partner countries – such as SABER (Systems Approach for Better Education Results) – provide assessments and comparative data on education policies and institutions in the Central Asian region and parts of Africa. Recently, a regional assessment initiative – led by UNICEF and the SEAMEO (Southeast Asian Ministers of Education Organization) – has been launched in South East Asia, with the aim of helping countries in the region systematically strengthen their education systems.

In South Asia, there have been no initiatives to create a regional assessment that could help inform and guide the quality agenda in education. However, there is a clear interest in regional cooperation to ensure a country-driven approach to the "data revolution" called for by the United Nations Secretary General's High Level Panel. Stakeholders from India and the South Asia region have been involved in the Learning Metric Task Force (LMTF) debates. The SAARC (South Asian Association for Regional Cooperation) also participated in these LMTF meetings. At an early LMTF consultation in Lahore, Pakistan, in April 2012, stakeholders from India, Pakistan, Afghanistan, and Bangladesh underscored the need for an approach to learning assessments that would be tailored to the national and regional contexts, and at the same time responsive to the global drive for better data on learning.

In India, the Ministry of Human Resource Development (MHRD) with funding from Sarva Shiksha Abhiyan (SSA) has been carrying out National Achievement Surveys (NAS) through the National Council for Educational Research and Training (NCERT) since 2001. While the NAS has been undergoing positive changes in each cycle every 3-4 years, these assessments face limitations in advanced technical expertise, manpower shortage, and meaningful dissemination of data and feed back to other educational interventions. India has also mandated State Learning Achievement Surveys (SLAS) with a view to track learning outcomes. About 25 states implemented SLAS in 2014-15. But states face severe constraints in terms of capacity to do the assessments well. Unless the assessments are done scientifically and feed back into the interventions for curriculum and pedagogy, these will be assessments for assessments sake and will not improve student learning.

In 2011, two Indian states Tamil Nadu and Himachal Pradesh participated in OECD's PISA+ which was a pilot round that followed PISA. This was a re-run of the PISA survey of 2009 arranged for countries who, for one reason or another, chose not to take part in the main survey. For India, limited participation in PISA+ was treated as a 'pilot', and in the two selected states the survey was organised and conducted using standardised instruments and procedures developed under the OECD secretariat. The results showed that the two states in India performed at the bottom of the global ranking. India, subsequently, did not

participate in the main survey, citing PISA to be inappropriate to the culture and context, and the information inadequate for meaningful intervention.

In the last decade, India has steadily moved from an approach of only measuring educational inputs (student enrolment, attendance, resources, etc.) to a comprehensive approach of inputs and learning outcomes. Efforts to strengthen NAS and initiating SLAS in the last few years shows the willingness towards large scale assessments, however much needs to be done to make these more informative, robust, and useful for educational transformation.

Common Objections to Large-Scale Learning Assessments

"Just weighing a pig does not fatten it"

This is an argument that is often put forth by those who believe that regular and periodic assessments do not lead to an improvement in learning. This is best answered by research from Cornell University which points out that people who step on the weighing scale everyday tend to have a higher success in controlling their weight, as the daily feedback gives them the opportunity to make small changes in their lives and get their weight back on track (Levitsky, 2014). While an assessment 'for' learning which provides data on 'what' and 'how well' students are learning is not a silver bullet in improving learning, it is a very good starting point for reform.

Learning assessments narrow the curriculum and causes 'teaching to the test'

The consequences attached to the student performance in a learning assessment largely influences the behaviour of teachers and schools. In systems where teacher accountability initiatives have resulted in learning assessments becoming 'high stakes' due to the rewards and punishments attached to test scores, experience has showed that narrowing of curriculum is a real threat, as teachers and schools focus only on teaching the content covered by the assessments. However, this is a scenario that is common in any high stakes testing situation. For example, in India, the 'high stakes' nature of board exams straitjackets all teaching and learning towards teaching towards the test, i.e., rote memorisation and recall of the content covered in textbooks. In the UK, the narrowing of the curriculum and widespread exclusions of low-performing students from schools (Rustique-Forrester, 2005), resulting from the Thatcher government's use of test-based school rankings, caused several countries to enact legislation precluding the use of test results for school rankings (Darling-Hammond, 2010).

These emphasise the need to keep the consequence of learning assessments 'low stakes'

and use the findings predominantly for improving teaching-learning. It is also critical to recognise that the issue of 'teaching to the test' may not be necessarily bad in the Indian government school system where, with issues of teacher absenteeism, the levels of learning are low and students are not acquiring even the basics of literacy and numeracy.

Relevance of context/cultural/linguistic complexities

Linguistic complexities, contextual and cultural appropriateness are challenges that learning assessments, especially the international assessments are usually criticised for. Critics also question the possibility of a culturally-neutral educational platform in which the same tests and test questions are used in countries whose social, economic, cultural, and colonial backgrounds are so vastly different, and suggest that peer comparisons would be more realistic and informative, in which countries with similar contexts and backgrounds are compared against each other (Meyer and Schiller, 2013). Realising the need for multiplicity of assessments and that a 'one-shoe-fits-all' approach may not be appropriate to get the full picture, many regions of the world even while participating in international assessments have moved towards having regional learning assessments.

Policy Recommendations

Create a national blueprint for school education that spells out 'where we want to go' as a country with respect to student learning outcomes in the next decade:
As part of India's new education policy, create a national blueprint for school education that will clearly spell out the aspirational goals and outcome targets of where we want to go as a country with respect to student learning in the next decade. It is important that the blueprint is actually an action document and not just an esoteric, aspirational one. For example, the blueprint will need to include elements that will specify the learning outcomes to be achieved in reading and maths in different ages. The action blueprint should not only specify the role of government but also other stakeholders such as all schools – public and private, funding agencies, non-governmental and private organisations, and media in working towards these goals and outcome targets.

Develop a comprehensive roadmap for learning assessments that will give a clear and detailed picture of 'where we are', and link it with a set of interventions to improve teaching-learning:
McKinsey's report on "what the best school systems do and how they keep getting better"(2010) reveals that best systems that keep improving the quality of their students' education have some commonalities – first, they seem to focus on understanding where the system stands according to student outcomes; second, they design a set of interventions to bring about the desired improvement in student outcomes, and finally, they adapt these interventions to the context in which these school systems exist and function.

If India has to improve its school system then it is important to start at the right point. Valid measures of student outcomes often are the starting point in an assessment led educational reform.

A comprehensive roadmap that strengthens the national learning assessments and the state learning assessments to provide a clear and detailed picture of 'where we are' needs to be developed. The inputs from these assessments need to be linked to a set of targeted actions/interventions related to teacher training, curriculum reform and pedagogy with the goal of improving teaching-learning. Additionally, these assessments also have to take a holistic approach to cover learning achievement in all schools and not just the schools managed by the government.

Benchmark performance by participating in regional and international assessments:
In this knowledge century, if our children do not acquire the relevant knowledge and skills, then our aspirations to leverage the demographic advantage and achieve economic wellbeing for all our citizens will remain a distant dream. As India aspires to play an increasingly leading role in the region and take its place among the world nations, we cannot shy away from benchmarking ourselves with other countries.

A regional learning assessment will be a good place to start benchmarking performance, as these have the advantage of covering a narrower ability spectrum (less heterogeneity) than global assessments, and which right away is likely to increase the reliability of the tool to provide meaningful diagnostic information at the learning levels relevant to the population of the region. It also has the potential to address challenges related to linguistic diversity, contextual and cultural fit, and learning needs specific to the region. Ensuring high quality global standards in the design and process of the regional assessment and linking the assessments to other appropriate international assessments also makes the data relevant at global, regional and national levels to ultimately create better learning outcomes for all.

Develop learning progress tracking systems and mechanisms that promote the use of data from the assessments for decision making at all levels in the educational hierarchy:
Using learning performance data for informed decision-making at every level of educational hierarchy changes how institutions function. It requires changing expectations, changing the thinking of management at the leadership level, developing assessments that accurately measure learning gains, developing learning progress tracking systems that make this data available accurately, granularly, and in a timely manner, and also building capacity at every level of the hierarchy to use the data well. Only when the data from learning assessments are used subsequently for policy as well as classroom decisions, do the full potential of assessments to bring change is leveraged.

Launch an information campaign against 'rote' learning and educate mind sets:
Rote learning can deceptively look like quality learning and be mistaken for it. It can be argued that reports of low student learning levels are alarmist, as students are scoring well in Board Exams and securing college admissions. Such an argument misses the point that the world of tomorrow needs people who may need to learn new skills every few years, and rote learning will not serve them well. Much debate and differences about education stem from whether the goal being sought is rote learning, or learning with understanding. A consensus needs to be gradually built that rote learning is not learning at all.

A long-term public education campaign should be instituted with the idea of discussing and disseminating these views around issues like "What is learning?", "What is good education for our children?", "Are our children getting equipped with the knowledge and skills relevant for this century?" Teachers and parents need to know quality in learning is not high marks in the Board Exams, but where students develop a deep understanding of

KEY POLICY INSIGHTS

- *Measuring learning outcomes is crucial as it provides information about where we are and where we want to go, sets benchmarks for performance, and facilitates meaningful conversations among stakeholders about learning gaps and the mechanisms to address them*
- *International assessments are criticised for failing to take into account linguistic complexities, and their contextual and cultural appropriateness is questioned. But at the same time, international assessments are necessary to compare the performance of nations in an economically interdependent world. Therefore, assessments of learning must occur at multiple levels, and a balance needs to be drawn between international, regional, and national-level assessments*
- *India's current learning assessment mechanisms – including the NAS and the SLAS – represent a willingness of the education system to move beyond an input-centred approach, but they face constraints due to the lack of technical expertise, manpower shortages, and the absence of meaningful dissemination of data and impact on educational interventions*
- *For learning assessments to be effective, they should de-emphasise rote learning, and their findings should be used to improve 'teaching-learning'*
- *An effective learning assessment framework should spell out the following elements:*

- *Start with defining 'where we want to go' in terms of learning outcomes*
- *Develop a roadmap for learning assessments to indicate where we currently are, and interventions that will help improve learning*
- *Balance national assessments with regional and international assessments*
- *Develop learning tracking systems that utilize data, and make information widely available in a timely manner*

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CHAPTER THREE

Building Capacity for Assessment and Quality Management

Vyjayanthi Sankar

Introduction

As countries start moving towards the recently agreed upon 'Education 2030 Framework for Action' to ensure quality education and improve learning outcomes, the demand for global data on student achievement to measure progress is likely to increase manifold. This will also necessitate countries to have rigourous assessment mechanisms to provide national-level evidence for improving learning outcomes.

Well-designed assessments not only provide numbers, but insight and actionable feedback that is useful for policy, pedagogy, and curriculum. However, there is a strong relation of inter-determination between institutional and systemic capacity for assessment and the quality of assessment mechanism. The 2014-2015 Joint Review Mission report of the Sarva Shiksha Abhiyan notes that while much of the effort and energy has been focussed on the process of establishing assessments, which require high levels of technical expertise and administrative skill, there is insufficient emphasis on what the assessments are actually showing. The purpose, it notes, is not to simply measure but provide actionable information which is acted upon for improving learning

Against this context, this chapter looks at challenges in India's capacity for measuring student learning outcomes.

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Need for Capacity Building

National and State Learning achievement surveys – not enough effort to bring about change: Recognizing the need for measuring learning outcomes, India not only carries out national achievement surveys (NAS) but has also mandated that states carry out state learning achievement surveys and report progress. NAS has been undergoing a number of positive changes in its third cycle in the last few years, yet, there may be scope for further improvement to make the assessments reach higher technical standards and the reports more meaningful.

According to official reports, in 2014, in accordance with the requirements for measuring progress as laid out by the central ministry, twenty five states had successfully completed State Learning Achievement Surveys (SLAS) and received training for SLAS and for use of advanced methodologies like the Item Response Theory (IRT). Nevertheless, the 20th and 21st Joint Review Mission report of Sarva Shiksha Abhiyan, 2014-15, points out that while NAS needs to be improved, there is urgent work that needs to be done with states around building their capacity to design, conduct, analyse, and use assessments and data rigorously.

Continuous comprehensive evaluation is too difficult to establish: In line with the needs of the Right to Education (RTE) act, schools in India have implemented Continuous Comprehensive Evaluation (CCE) in the last few years, with the main objective of having a school-based evaluation that continuously tracks student progress throughout the year and reduces exam pressure. CCE is also comprehensive and includes assessment of co-scholastic areas like sports, arts, culture, music, etc. However, for CCE to succeed, teachers have to be trained professionally to understand, develop and use a diverse array of evaluation strategies that are not confined to a paper-pencil test. The 21st SSA joint review mission, 2015 reports that CCE is proving too difficult to establish, the process too heavily dependent on the teachers' capacity and motivation, and the results that emerge too unreliable to be of much value. It cautions that doing CCE badly may have a worse effect on the system than not doing it at all, and that teachers' competencies have to be built for reliably assessing their pupils' learning through training and effective school management. VV

Public (board) exams, a case of tail wagging the dog: Due to the high stakes nature of India's board exams, the entire K-12 system focuses on student performance in these exams rather than actual learning. The exams themselves are very textbook-based and do not test for deeper conceptual understanding. Students who are able to memorize the content well, demonstrate performance at mastery-level in these exams. This has led to a proliferation of coaching classes in the system which offer tutoring to students using a 'teach for the test'

approach along with tips and tricks to handle item types rather than answering an item genuinely. (For example, students are taught not to read a passage for comprehension, but rather read the item first and then hunt for the key words to extract explicit statements from the passage as answers). Although it is worth considering whether performance in these exams is a true reflection of quality education, it is important to recognize that the public exams seem to straightjacket the educational practices in schools and society, with the system geared towards achieving marks. NCERT's position paper of the *National Focus Group* on examination reforms, 2006 mentions the lacunae in the quality of assessments at secondary level and call for the school leaving exams to become much less rote-based without sacrificing their rigor or quality.

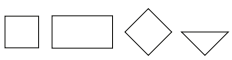
Lack of institution for training in psychometrics and learning research: While there is a lot of high-stakes testing in India, with 48 registered boards of education including all the state boards and three national boards, the country does not have an institution that trains for psychometrics – the field of study concerned with the theory and technique of psychological and educational measurement. This has led to a dearth of trained manpower who can be recruited by national institutions or other independent research organizations for carrying out assessment and learning research. There is also an absence of university departments doing quality research or technical work in this area, pointing to a lacuna in overall systemic capacity that needs to be addressed for effective sustenance of high quality assessments in the region.

Gaps in Institutional Capacity for Measuring Learning

As we move forward in the path of assessment-led reform, it is but critical to acknowledge that a multipronged approach is required to bring about quality in student learning. An assessment by itself will not be able to solve the learning issue. Yet if assessments are designed scientifically they will be able to provide direction about what needs to be done at the level of policy, teacher training, teaching learning materials, and curriculum. While all stages of an assessment cycle are important, two areas are critical. These include the instrument development and analysis of data.

Inadequate attention to assessment design and item writing: The heart of any assessment project is its instrument design. It is essential that sufficient time and specialist resources in NAS and SLAS are dedicated to instrument development to assure the fundamental success of the project. Developing good items is an art as well as a science. It requires a lot of practice combined with a deep understanding of how children learn and think. Item writers tend to develop good items when they have an excellent grasp of subject

Some examples of poor and good items from large scale assessments

Column A - Poor Items	Column B - Good Items
Good items address important learning outcomes. The item in column B check for student's understanding of measurement, while the items in column A check for trivial facts on measurement.	
1. Metre is the standard unit for measuring _____ 2. Division of length by a whole number results in _____	3. How long is the pencil shown in the picture? (Use the ruler shown in the picture.) Ans: _____ cm 
Good items do not test a different skill than intended. The items below are meant to check for student's understanding of simple machines and concepts such as load, effort, and distance from fulcrum. The item in column A can however be got correct through an understanding of equality of numbers as students when confronted with this item usually tend to add or remove stones but do not think of adjusting the distance from the fulcrum.	
4. Balance the Seesaw. 	5. Balance the Seesaw. 
Good items are tailored to fit the student's age, ability level and purpose of the test. The item in column A is complicated and also uses 'not' which is not appropriate for grade 4 – the grade for which it is designed	
6. Salman has a box containing 10 crayons that are red, yellow and blue. 3 of the crayons are blue and 9 are not red. How many yellow crayons are there in the box? Ans: _____	7. Saritha wants to give one half of the sweets shown below to her friend. How many should she give?  A.Two B. Three C. Four D. Five
Good items are written as clearly as possible and avoid ambiguity. The 1st example in column A is ambiguous in instruction, while the 2rd ambiguous due to overlapping options	
8. Tick the square below.  9. The average life expectancy of an Indian male is A. less than 72 years B. less than 73 years C. between 73 and 75 years D. more than 75 years	10. Tick all the squares below.  11. The average life expectancy of an Indian male is A. less than 68 years B. between 68 and 70 years C. between 71 and 72 years D. more than 72 years

Good items are written with plausible distracters that traps the possible misconceptions carried by students, and do not give away answers through clues or irrelevant options.

12. Which of the following men invented the telephone?
A. Bell B. Sarconi C. Salk D. Morse
13. Which of the following diseases occur in the arctic area?
A. Skin burn
B. Snow blindness
C. Dehydration
D. all of the above

15. Which of the following men invented the telephone?
A. Bell B. Sarconi C.Edison D. Morse
16. Which of the following diseases can be caused by the sun?
A. Skin burn B. Snow blindness C. Dehydration D. all of the above
17. The moon produces no light, yet it shines at night. Why is this?
A. The Moon reflects the light from the Sun.
B. The Moon rotates at a very high speed.
C. The Moon is covered with a thin layer of ice.
D. The Moon has many craters

Items 1,2, 4, 5, 6, 7, 8, 14 provided by author; Items 2, 10 from Educational Initiatives; Items 9, 11, 12, 13, 15, 16 from the book 'Small Book of Test Theory and Test Construction"; Item 17 is TIMSS 1994 released item.

with an ability to separate the core concepts from the peripheral in terms of testing the learner's understanding; strong language skills - along with the ability to determine age-appropriateness; culture-specificity of the language used while framing items; a good amount of creativity and interest in exploring innovative item ideas and new problem types; willingness to carry out in-depth research to check veracity of the items and information used in an assessment tool; an eye for quality, strong editing and proof reading skills; and more importantly practical experience of working with the target age group and also building diagnostic test items that reveal not only what children know and do, but also deeper insights into their misconceptions and common errors they make.

Limited knowledge base and expertise for meaningful data analysis and report writing:
Steven Levitt, the author of Freakonomics says, "If you learn how to look at data in the right way, you can explain riddles that otherwise might have seemed impossible. Because there is nothing like the sheer power of numbers to scrub away layers of confusion and contradiction".

The key therefore is how you analyse the data. Analysing and making sense of large

volumes of student performance data requires ability to arrange and clean the data, have knowledge and experience of statistical techniques and software including the advanced ones. Expertise is needed not only on how to use the techniques but when to apply what, and to make sense of the output of the analysis. Good analysis does not stop at reporting the observations/output from the techniques, but takes it one step further by providing the insights/story about student learning that underlies the analysis output. Reports written by people not familiar with statistics are usually not substantiated with adequate data evidence, on the other hand, reports written by statisticians/ psychometricians tend to have a strong bias to report the information in the form of statistical tables using similar technical jargon. What may be required is a mid-path for reports, which looks at it from learning angle but is powered by strong analytical techniques to unearth the insights. Analysts and report writers also need a deep understanding of student learning issues for the subject tested. The NAS and SLAS teams in most cases outsource all or part of their data analysis and report writing work, due to lack of capacity in this area.

Low data literacy is an impediment for effective use of the assessment results: As a legacy of our education system, which does not provide adequate exposure to data literacy, tabular, and graphical data representations, one often finds that as adults, there is a general discomfort in reading and understanding data in our country. Stakeholders in the education system are usually not well-versed with basic concepts like percentiles, standard deviation etc. let alone sophisticated visual data representations. Unless teachers, teacher trainers, and education officials are made familiar with basic concepts of data, the results from the assessments are less likely to be utilised less than they should in the reform process.

The assessment findings do not feed any further research into understanding student thought: Very often, when a student gives a wrong answer to a question asked in the class, the teacher expresses unhappiness and then moves from student to student until someone gives the right answer. In such scenario, if the teacher had stopped the first time a student gave the wrong answer and asked the student to explain why/how they arrive at their answer, this would have revealed possible misconceptions that the student had, which many more in the class are also likely to have had.

Similarly, when large scale learning assessments show that many students are choosing a particular wrong answer, most do not take up any further research on why that might be. It is important to interview the students on these questions and explore why they choose specific answer responses.

Systems that aspire to improve learning, need to focus more on the wrong answer than on the right answer, as this will be a powerful and strategic tool in improving learning.

Current Approach to Capacity Building

The recent Incheon declaration for achieving the education 2030 agenda calls for strong global and regional collaboration, cooperation, coordination and monitoring of the implementation of the education agenda based on data collection, analysis, and reporting at the country-level, within the framework of regional entities, mechanisms and strategies. It also resolves to develop comprehensive national monitoring and evaluation systems in order to generate sound evidence for policy formulation and the management of education systems as well as to ensure accountability. It requests co-conveners and partners of the World Economic Forum 2015 to support capacity development in data collection, analysis and reporting at the country level.

In India, the 20th Joint Review Mission of Sarva Shiksha Abhiyan (2014) recommends that "at the institutional level individuals with specialized knowledge of learning and measurement may need to be developed both within the government and in the larger educational ecosystem. This would involve subject experts, pedagogy experts, psychometricians, data scientists, neuroscientists and technology collaboration. This would be through building content, course work, certification, and hands-on experimentation that focus on how learning can be improved and measured."

Recommendations

Develop a multipronged long-term action plan to build capacity at systemic, institutional, and individual level: There is a Chinese proverb which says "give a man a fish and he eats for a day. Teach him to fish and he eats for a lifetime".

If we need to build robust measurement mechanisms, it is important that capacity for assessments is built, else assessments will happen a few times with outsourced support, but will not be sustainable in the long run. The action plan for building capacity should look at long term needs for assessments and learning research in the country. It should be multipronged and address the lacunae at systemic, institutional, and individual people level.

While the plan for systemic capacity will focus on building a body of knowledge and researchers with expertise in the science of measurement and learning, the institutional capacity plan will work towards building and strengthening institutions at the national and state levels to develop, implement, and use robust assessment mechanisms for meeting the country's goals towards student learning. The plan for developing individual capacity will work towards professional development of teachers, and educational functionaries at the local level to leverage the findings and integrate it in the classroom practice for lasting change.

Create a national fund to support research and capacity building for assessments: Research and capacity building are either not provided for at all, or are given inadequate funding in most education budgets. Hence, a national fund needs to be created with contributions from aid agencies, donor partners, and corporate social responsibility for developing these two areas. This fund will provide grant support for research institutions, non-governmental organizations (including the private sector) based on their track record and quality of research, and direct research and capacity building efforts for meeting national and state priorities.

Establish an institute for assessment training and research:

> *In late 19th century, on board the Empress of India, a chance meeting happened between Swami Vivekananda, a monk passionate about science and development and Jamshedji Tata, an industrialist who was a keen supporter of social reform. On board this ship, they discussed Tata's plan to build a steel mill in India, and it is believed that Vivekananda told Tata that there were two parts to the challenge – manufacturing technology and the science of steel. The former could be brought from abroad but the science had to be researched at home.*

This story is of relevance to assessments and learning research. Much of the research into assessment science and science of learning exists in the West. While the short term efforts in capacity building can bring us the technical know-how of assessments, it will not help bring lasting change unless we learn and work on the science behind it. A specialised 'assessment training and research institute' should be established as a hybrid between an institution for learning, research and an implementation entity (similar to a Medical College Hospital – which provides medical services, while simultaneously training professionals with theoretical rigour and hands-on practice). Such an institute will be better-suited to address the twin needs for doing assessments and learning the science behind it.

Encourage universities to work in futuristic areas: With the advent of tablets, mobiles and internet connectivity, the world is fast undergoing a paradigm shift in its way of carrying on 'business as usual'. Education is happening through e-learning software, online academies, learning apps, gaming platforms, etc. As all these create more and more data on student learning, futuristic areas such as data mining, artificial intelligence, neuro science and gaming technologies will gain prominence. Indian universities should be encouraged to work in such areas which have the potential to leapfrog us by creating out of box solutions along with educationists, anthropologists, philosophers, psychologists, linguistics experts.

KEY POLICY INSIGHTS

- *The purpose of learning assessments is not merely to measure, but also to provide actionable information that feeds back into the education system, and is acted upon to improve learning*
- *The institutional and systemic capacity for assessment, and the quality of assessment mechanism are closely linked*
- *Assessments designed scientifically will be able to provide direction about what needs to be done at the level of policy, teacher training, teaching learning materials, and curriculum*
- *The need for capacity building stems from several institutional challenges in implementing and improving the present assessment mechanisms – including*
- *There are significant gaps in institutional capacity to measure learning, particularly in the areas of instrument development and analysis of data.*
- *Some of these challenges include:*
  - *Inadequate attention to assessment design and item writing*
  - *Limited knowledge base and expertise for meaningful data analysis and report writing*
  - *Inability to make effective use of assessment results*
- *Building capacity requires a multipronged long-term action plan that addresses the challenge at three levels: systemic, institutional, and individual*
  Efforts must be made to increase research in the area of assessments and psychometrics, through the establishment of a research fund, an institute for assessment research and training, and encouraging universities to work in futuristic areas to develop innovative solutions

CHAPTER FOUR

Addressing Teacher Quality & Training

Maya Menon

The Setting

Teachers matter! A nation can only be as competent, creative, and compassionate as the quality and nature of teachers and teaching. Abundant research from across the world points to this logic. However, in India, fact and fiction intertwine to create a strange smokescreen about schools, teachers, and teaching. For the purpose of this article, I have deliberately chosen not to distinguish between teachers working in government schools and those working in private institutions across our large and diverse nation. What is presented - admittedly against the odds, popular discourse, and perhaps logic - is a unified idea of Indian teachers and teaching.

Let us first examine a few facts about school education in India – a dozen in all, for the sake of simplicity:

1. India has the largest number of school-going children in the world – with nearly 450 million falling under the age of eighteen years.
2. Since 2009, access to education has been made a fundamental right for every child in India between the ages of six and fourteen years. But six years on, children in the vast majority of our schools still get a very inadequate, and often poor education.
3. It is now mandatory that teachers are adequately trained and qualified to teach with either a Diploma in Education (D. Ed) or a Bachelor's in Education (B. Ed).

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4. The National Council of Teacher Education's (NCTE) Curricular Framework for Teacher Education 2009-10 requires all trainee teachers to learn to teach effectively and sensitively using child-centred contemporary approaches.
5. The vast majority of teachers, however, continue to be given training that is uninspiring, rote-based and theoretical, both at the pre-service and in-service levels. The focus is less on building teachers' knowledge, skills, and dispositions for teaching, and more on burdening them with information and instructions to be adhered to.
6. Teachers do not receive any mentoring to make that difficult transition from serving as a trainee teacher to 'live classroom teaching'.
7. Teachers and children are required to work and learn in conditions that would, in most other parts of the developing world, be deemed violations of basic human rights with no access to clean drinking water, hygienic toilets, or clean, vibrant study spaces.
8. Teachers often get salaries that would put daily wage workers and domestic helpers to shame – ranging from an appalling Rs. 3000 to a menial Rs. 6000 per month.
9. Yet, there are significant numbers of teachers who are being paid competent salary scales. However, even these do not place students and their learning outcomes at the centre of all they have to do. This accounts for the poor learning outcomes of large sections of Indian school-goers.
10. When students don't learn, teachers assign the blame to them and their illiterate parents. But the nation on the other hand, holds the teachers responsible.
11. The Ministry of Human Resource Development, State departments of education, education and curriculum planning boards, principals, and school managements rarely ask practising teachers for their inputs or opinions on any aspect of school functioning, including teaching. Instead they routinely expect teachers to carry out their orders. It is rare to find a single government agency in education functioning either with a supportive, developmental and mentoring perspective or with a rigorous quality-monitoring objective. Most other countries have a good inspectorate of schools, but in India, the education departments in most states function as opaque kleptocracies, offering patronage or approval on whims or for blatantly unethical ends.
12. Teaching is one of the least sought-after professions in India, and owing to this, there is a serious shortage of teachers across the country. The typical image of teaching is one that is dull, grey, and – at best – a bit stodgy, which is completely at odds with young children and their need to be stimulated with energy, colour, and joy. The rare times when bright young people seek out teaching as a profession, it is more often than not for reasons of convenience and domestic exigencies. This also explains why it is a female-dominated profession. Any worthwhile in-demand profession in the world tends to equally attract men and women – but this is not the case with teaching in India.

Meanwhile, some of the misconceptions that we continue to feed about teaching and teachers in schools include:

1. Teaching is a highly-respected and noble profession in India:
   "At the heart of ... (the) pedagogic relationship (lies) the Brahminical ideal of the teacher's moral authority. The teacher was supposed to possess sacred knowledge, which he knew best how to transfer to a student".
   "....the teacher's role vis-à-vis the children continue(s) to follow the Brahminical idea. ... teacher as a guru has survived the onslaught of colonization. His (her) moral authority over children remain(s) unchallenged and the child's need to be treated as an individual remain(s) a foreign idea...the schoolteacher continue(s) to perform an ancient political function, that of subduing the spirit of curiosity and questioning." (Dr. Krishna Kumar, 1991: 200).
2. While teaching is considered a noble profession and the teacher is expectantly above the mundane needs of human existence like adequate remuneration, paying teachers more will motivate them to teach better. (This, however, raises the question - will higher salaries attract good teachers or will good teachers and great teaching command better compensation?)
3. The lack of good teachers can be solved by 'teacher-proofing' schools with technology and ready-made, pre-packaged lesson plans.
4. Making provisions for in-service and continuing professional development of teachers is self-defeating for the school. It only results in them hopping jobs, in search of better prospects.
5. The role of Heads of schools is to ensure obedience and compliance by all their teachers.
6. Since marks and grades are Indian society's gauge of successful learning and a good school, it is the teachers' bounden duty to focus all their energies on coverage of curriculum and assigning their students appropriate grades, especially in urban high school settings.
7. Time is always in short supply, so teachers cannot waste this commodity by exercising their or their students' innovative and creative capacities. And, in any case, parents do not expect it, since the latter are only concerned about the marks their wards secure.
8. Visitors to schools are impressed by infrastructural additions, CCTV cameras and other similar resource installations. However, clean toilets are not visible and, therefore, best forgotten.
9. It is possible for a teacher to handle fifty to seventy children in a single class and section, even if they are of different ages. He or she just has to be firm and strict. After all, teachers who are tough and harsh will be able to control their students well and get them to obey.
10. Teachers should not have too many free periods, because they would use them to gossip in the staffroom.

11. Teachers who hold B. Ed and D. Ed degrees are superior to teachers without these qualifications. Therefore, professional development programmes on various pedagogic practices do not really add value to their practice.

Meshing the facts stated earlier with the aforementioned ill-placed beliefs about teachers and teaching, results in the majority of Indian teachers having a peculiar psyche that may be perplexing to their counterparts from other countries – developed or developing. Kumar (1991) refers to the paradox of the personality of the nineteenth century Indian teacher and calls her the meek dictator. The typical school teacher in 21st century India continues to be the same. She is uncertain about her professional identity and status, is inadequately paid and low on self-confidence. However, she compensates for the latter by exerting her authority in class among her students. But this too has been severely undermined in recent years, for two reasons: first, in a technology-driven world, her students have access to far more information than their teacher has; second, owing to the low status society has attached to teaching, the teacher has become a convenient punching bag for all society's ills.

So, the teacher – inadequately trained, minimally skilled, and with dangerously diminished moral resilience – takes the path of least resistance.

A Culture of Convenience

Teachers who have to contend with the realities of the Indian education system have instinctively learnt to adopt a culture of convenience. This works particularly well in an environment where there is a national tendency in any case, to take short cuts. So what do they know, and feel? What do they do?

Teachers put on a front of knowing and doing what they are supposed to be doing at school. The 'form' takes greater importance than the function, and external appearances often supersede intrinsic motivation and value.

To illustrate this point, let me narrate a recent incident in a high-end private school that is part of a very successful chain of schools. The high school teachers were assembled for a two-day professional development programme. While the Principal and Vice-Principal were in the room, the teacher participants were very quiet and seemed very engaged with the theme: 'pedagogic strategies for active learning.' But as soon as the senior leadership left the room, the teachers began to get restless, doubting the efficacy of the approaches and methods being discussed. They questioned the practicality of the tried-and-tested strategies, citing time, curriculum, numbers of students in classes, parental stress on marks, and such, as deterrents. In an authentic professional relationship, these deterrents should

have been applicable even when the school leaders were in the room. The teachers could have raised their objections, but they did not. Why? Because they wanted to demonstrate and please their school heads with their involvement and participation. However, the real purpose of changing classroom practices and enhancing learning was deftly side-stepped. Another example of convenience dictating practice is the increasingly ubiquitous use of interactive whiteboards in private schools catering to all economic strata. It is so much easier for school owners and managers to invest in tangible resources, such as technology, to impress their parent-clients, than focus on developing skills and competence in teachers, who are far less reliable as permanent resources in the school. A whole industry of school technologies has mushroomed to cater to this requirement for convenience – offering ready-made lesson plans, web-based resources, and other packages on a chargeable basis, when the same resources are available for free on the internet!

When there is a visit from an external organisation or an official audit or inspection, efforts will be made to ensure that the school looks good, with nothing out of place, everything calm and in order – including children, looking neat, sitting quiet, and being obedient. A typical day may not look like this but an inspection day must – so children are requested not to move out of their classes, not even to drink water or visit the toilet. Teachers try to put their best foot forward and plan their lessons making sure they use resources and strategies they may have picked up in various trainings. However, doing all these things daily, because our children deserve meaningful learning experiences, is highly inconvenient.

It is this same culture of convenience that prompts government departments of education and private school managements to disregard the RTE requirement of one teacher for every thirty students in a class. They reason that having fifteen of twenty or more additional students in a class is far more convenient than accommodating them in another classroom or section. Not enough thought is given to how this could impact the teacher's effectiveness and stress levels or how it diminishes the quality of the relationship between the teacher and her students.

While an honest, robust, and vibrant professional relationship between the school head / principal and their teachers forms the cornerstone for all school improvement efforts, very little importance is given to enhancing the quality of the relations between teachers and their leadership teams. Managing relationships could be the most inconvenient and time-consuming endeavour of schools, and yet, when leveraged well, they can surmount some of the most intractable issues concerning children and their learning. However, our culture of convenience makes dispatching orders and instructions to teachers and parents the preferred form of communication. But when feelings and people's views take a back seat, then learning, too, does the same!

Interactions with practising teachers from different countries reveal that their working hours are significantly longer than those of Indian teachers. Teachers in Singapore put in ten to eleven hours each day, at school and at home; teachers in the United Kingdom pack in similar numbers of hours; so do school teachers in the United States, Japan, and South Korea. Teachers in India typically work seven hours each day. They intensely dislike staying back in school for even an hour after the students leave for the day, in order to catch up on work, plan, collaborate, and innovate. It is inconvenient to have to go home later than your school-going children and, sadly, domestic demands take precedence over school or student needs.

Reimagining school teaching and teacher training in India

To quote Zoe Weill of the Institute of Humane Education, "The world becomes what we teach." As an extension of that one could affirm that the world will not become what we don't equip our teachers to be, feel, and do.

Based on various informed estimates, India has a shortage of anywhere between one and three million teachers. This shortage has dire consequences as it impedes the implementation of the Right to Education Act in its full and true spirit, apart from seriously jeopardising the learning experiences of millions of children in our country. As Prof. Krishna Kumar writes, (The Hindu, May 2011):

> *"Part V of the RTE Act lays down fairly specific terms under which the quality of elementary education is to be ensured. These include a comfortable teacher-student ratio, curriculum reform and improvement in evaluation methods.*
>
> ***The success of these measures depends on teachers, and that is where the system is facing its worst obstacle.***
>
> *...According to current estimates, the country will need well over a million teachers over* ***the next four years*** *in order to meet the RTE norms. Who will train that many teachers? And who will orient the existing cadre of teachers towards the child-centric vision of RTE? One might have imagined that universities will play a major role in this national enterprise, but there is no sign of such an initiative being taken. Even the newly set up central universities have ignored teacher education. Distance education is perceived as the only viable solution to this conundrum. But even for this option, there seems to be little realistic assessment of the costs involved in creating the kind of infrastructure the SCERTs will require in order to liaison with providers of distance education. ...There is a great risk that a vast number of nominally trained teachers will be allowed to enter schools."*

Today, four years since the publication of this article, nothing dramatic has occurred on restructuring teacher training, whereas it should have begun on a war footing. In 2012, the Justice Verma Committee (JVC) Report on Teacher Education was tabled with several excellent recommendations for revamping teacher education. Several discussions have also taken place, but apart from the academic deliberations, sufficient traction for change continues to elude us.

But starting July, 2015, universities – including the University of Delhi – are planning to offer the two- year B. Ed Course suggested in the JVC Report (2012). This would entail a new and expanded curriculum with potential for enriched ways of transaction. Apart from that, there does not seem to be any great overhauling of colleges of teacher education or the District Institutes of Education and Training (DIETs) which are mired in bureaucratic dullness

The recommendations of the Justice Verma Committee Report (2012) demand a whole new approach on the part of those training teachers, to engage with and equip teacher trainees with the knowledge, skills, and attitudes required of competent and committed teachers in all Indian classrooms. This will be a long haul, since majority of teacher educators in our colleges of teacher education have not had sufficient experience interacting with young school-going students in classrooms or handling the routine functions that teachers are supposed to manage on a daily basis. Therefore, the training they give prospective teachers is theoretical and distant from what needs to get transacted in the rough and tumble of life in schools.

And while it would not be possible to build the capacities of the teacher educators themselves and transform teacher education overnight, the Ministry of Human Resource Development, in conjunction with a more nimble and imaginative National Council of Teacher Education, needs to determine a multi-pronged strategy for the next five years.

Ways forward

This multi-pronged strategy must incorporate some or all the following:

1. ***Build the capacity of existing teacher educators*** in terms of their pedagogical approaches, coaching and mentoring skills, and knowledge base. This needs to be done state by state across a time span of two to three years. Technology could be used significantly in order to ensure speed and scale without dilution of quality. Admittedly, this calls for a concerted will and sincere intent on the part of education policy makers and bureaucrats working in education. Teacher educators should be mandated to undertake a minimum number of professional development days every year. A range of Information and Communications Technology (ICT) architecture could be used for building teacher educators' professional capabilities. They could include setting up:

a. ***Communities of Practice:*** At every College of Teacher Education, DIET, and Block Resource Centre, a rich repository of training materials, readings, etc. could be designed and developed using Moodle. All the content and reading materials, video-clips of classroom transactions, assignments, multiple choice type assessments, etc. could be loaded on to the Moodle site, accessible from any location – SCERTs, CTEs, DIETs, BRCs, and CRCs - through a thin-client network. This would also be useful as a management information system to track and update every participant's attendance, and assignment and assessment completion, etc.
b. ***Flipped Learning using Net Books/Tablets:*** Individual participants could access Moodle from their personal devices or at the BRCs and DIETS. They could view classroom video clips as a prior task, do the readings and/or assignments expected as part of the capacity building, before coming for a centralised blended learning.
c. ***Centralised Blended Learning*** – using existing cloud-based platforms like the Cisco Education Enabled Development (CEED) platform or Elucido. The hardware could be installed at all CTEs and DIETs. The teacher educators could come to the central venues – such as CTEs or DIETs – on appointed days to undergo face-to-face learning with help and support from a remote specialist facilitator.

2. ***Strengthen the existing D. Ed and B. Ed courses*** by offering enrichment courses as required electives on contemporary pedagogic practices. These should be conducted by private or non-governmental organisations that have a demonstrated competence in the area.

3. ***Experiment with high quality alternative teacher certification courses*** alongside mainstream teacher training colleges and institutes. These courses need to have both offline as well as online versions (this is contrary to the recommendations of the JVC Report). The existing NCTE norms require re-assessment and far greater flexibility. Anytime, anyplace learning with technology support is here to stay and we need to leverage that to transform teacher training quality. Of course, the requisite school internship component would be a vital part of both versions of the course. The availability of flexibility to learn, without any compromise on quality, will attract the average young or older Indian, male or female, keen to make a career of teaching. The emphasis on 'average' as against the brightest, is deliberate – since the long-term success of anything as vital as education depends on the excellence of its average stakeholders, and not on the brilliance of a few. Countries like the US and the UK have several alternative routes to qualified teacher status. In India, we are still blinkered about following norms that are outdated and counter-productive. We need to be innovative and bold in attracting good people into the teaching profession, and training them well so that they are inspired to continue working with, and for children – in or outside classrooms.

4. ***Develop 1000 Teaching Schools*** across the major cities and towns of India, which would have really well-trained supportive mentors to hand-hold teacher trainees who may be interning with them while they are enrolled in an alternative teacher certification course.

5. ***Strengthen the Teacher Eligibility Test or TET*** (state and central) and any one qualified to teach should have gone through any rigorous teacher training course of a specified number of hours, school internship signed by a competent authority, and passed the TET. It should not be of consequence whether the prospective teacher went through a regular B. Ed college or an alternative teacher training course be it an offline course or an online one.

6. ***Develop Teacher Standards*** against which teachers can periodically assess themselves and/or be assessed by peers and supervisors. Simultaneously Career Management needs to be seen as a key course for trainee teachers in all teacher training courses – regular or alternative.

Conclusion

What teaching and teacher training lacks currently is imagination and bold ideas. We are caught up in a mire of doubts and delays. The nation's children cannot and must not wait forever while the political leadership, bureaucracy, and academia arrive at some consensus of how to provide the right to education in actual fact. As David Kelley, Founder of the design education company IDEO said, "Innovators aren't exceptional as much as they are confident" (2011). So, let us confidently implement the suggested ideas, because they are eminently sane and many of them have already been successfully tested or are currently being piloted.

KEY POLICY INSIGHTS

Teachers in India continue to receive training that is uninspiring, rote-based and theoretical, both at the pre-service and in-service levels. The focus is less on building their knowledge, skills, and dispositions for teaching, and more on burdening them with information and instructions to be adhered to. Additionally, there is no mentoring to allow teachers to make a difficult transition from serving as a trainee teacher to 'live classroom teaching'. Teacher training needs to be overhauled to provide a more determinative teacher identity, equipped with proper training, mentoring, and leadership capabilities. Some elements of such an overhaul include:

1. *Build existing capacity: develop new teaching schools, while simultaneously building the capacity of existing teacher educators and making the current D. Ed and B. Ed courses more relevant*
2. *Alternate methods: Experiment with alternative teacher certification courses, and leverage the experiences of private and non-governmental organizations that have been working in the area*
3. *Teacher Standards: Develop teacher standards so teachers and their peers/ supervisors can periodically assess performance*
4. *Strengthen the Teacher Eligibility Test: the focus with respect to qualification should be on the rigour of the course and competence of the authority*

Eventually, it is critical to address the "culture of convenience" that has crept in to the teaching profession. A key aspect in this regard is to encourage school leaders and teachers to work together to cultivate better working relations.

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VIEW FROM THE LAST-MILE

Teaching is "Social Work"

Snehlata Yadav

"I teach those children that are rejected from everywhere and by everyone."

A teacher whose responsibilities extend beyond the four walls of a classroom, Ms. Yadav – or Sneh Ma'am as she's known – is a primary school teacher in a school run by the South Delhi Municipal Cooperation. Driven by a zeal to support and incentivise the first-generation learners in her classroom, she believes that "given the background of these children, it is we who have to motivate them, it is we who have to support them, and it is we who have to teach them how to hold a pencil."

She understands that her students' parents are constrained in how much they can participate to their children's education, their contribution being limited to "sending their child to school". She finds satisfaction in providing direction to these children. A teacher and a motivator often lacking resources, she sees what she does to be "social work".

Challenges and Constraints

Given the socioeconomic context of her students, Ms. Yadav understands that she "does not have to teach, but has to educate them". One of the challenges she faces in this process is to "bring these children to school so that [she has]

Snehlata Yadav is a primary school teacher at a school run by the South Delhi Municipal Cooperation, in Andrews Ganj, New Delhi. This article summarises a conversation with Ms. Yadav. All quotes that appear have been translated from Hindi. Aakriti Chowdhary and Devansh Tandon contributed invaluably to this article.

the needed attendance in the class to teach and provide them with five hours of positive energy". She states that it is necessary to emphasise to them the need for education and not pressurise them with syllabi and marks.

The hardest task for her has been to prevent lags in the education process. Given that these students come from the remotest corners of the country, a visit to their native village extends for six months. "The students who left now, will come after Rakhi. The students who go now will come back after Diwali." She believes every break brings them back to the starting point, causing her to start afresh.

She adds that certain policies that are advantageous for these students end up being problematic for her as a teacher. As the MCD schools are meant to be "schools for all," the government provides admission to any student at any age and at any point in time. The schools have no authority to ask for documents and must admit the student immediately. As a teacher, Ms. Yadav may have to teach a student from scratch even towards the end of the academic year.

Schools are also expected to admit children at a grade-level based on their age, as opposed to their learning abilities. For instance, a fourteen-year old, who has never stepped into the premises of a school, is admitted directly to class 5. So she ends up teaching one student in fifth-grade how to write, while teaching another how to solve a mathematics question.

Apart from the challenges stemming from her students' backgrounds, Ms. Yadav also contends with an administrative workload that takes away from her time to teach. She believes that the urgency that comes with the job of an administrator is inevitable. But despite this, she has been able to find solutions to ensure that her children's education isn't hindered – she sometimes assigns them independent group tasks like writing opposites on the blackboard, or asks them to read a book from the class library.

Of course, one challenge she finds hard to overcome is the limited resources at her disposal: "I have one computer for 35 students. If everyone gets a chance to just type their name on the computer on one day, I feel accomplished."

Allowing Every Child to Learn Something

Ms. Yadav points to how the prescribed curriculum does not take into account the realities of her students' learning levels and skills. She laments the fact that policymakers and the syllabi they design are "completely out of touch with the needs of my students." Disappointed with the prescribed books being above the level of the kids she teaches, she

admits to often using the books and curricula from private schools to guide her teaching, especially for primary school students. She has found the government curriculum and syllabus inadequate, since "the curriculum is not aimed at the average student in my classroom."

Since she is often teaching children of different levels in the same classroom – due to year-round admissions open to every child and mandatory promotions – it is impossible to complete the prescribed curriculum, forcing her to improvise. Consequently, rather than trying to complete the syllabus, she tries to tailor her teaching to the level that her children need, so that "every child can go home having learnt something." *In this regard, she emphasises the importance of "the teacher to know how much her students know, how much they should know and not how much syllabus they need to complete."*

Innovating to Address Learning Gaps

After teaching geography to class 4 students for six months, focusing on the maps of Delhi and India, in the summative assessment Ms. Yadav found that her students hadn't learnt much at all. In a test she found that "students couldn't differentiate between Rajasthan and Pakistan" and "didn't know the states adjacent to Delhi."

Introspecting on this poor performance, she "realized that the reason students couldn't identify the states of India correctly was because they couldn't read the map labelled in English." The biggest challenge for her students wasn't their ability to understand geography; it was the language barrier that they faced. After realizing that kids were unable to correctly read the map and identify states that were labelled in English, she was forced to re-evaluate her teaching style and curriculum. She started by putting up a big map on the classroom wall and highlighting each state in a different colour. This helped children identify states correctly and she then started to use riddles and stories to reinforce learning. Then, to teach state capitals, she divided the class into two halves – each student being assigned either a state or capital – and the class would pair them up as a group.
Ms. Yadav finds that games like these really helped keep the students engaged and "led to an improved final result at the end of the year." She also finds that "the children continued to do well when introduced to the world map the next year."

She talks with similar pride about other innovations that her colleagues have introduced, such as using videos and cartoons to supplement English lessons, having students teach each-other in groups, and using a board to publicly track attendance and rewarding children for every month of full attendance. Even small rewards such as a star or badge incentivise students to improve their attendance and performance.

Empowering Teachers through Participation in Policymaking

Ms. Yadav highlights the problems involved with the process of designing the curricula prescribed to schools, pointing to the fact that this is often done by people who don't have any teaching experience in the classroom. This is a problem since "a professor, lecturer, or a senior secondary teacher making the syllabus will have unrealistic expectations from a class 1 student." She stresses the need to involve teachers in the process: "The board needs to involve teachers in the process of designing the syllabus" adding that teachers "understand the background and capabilities of the student."

Being involved in such decision-making can also have a positive impact on teacher motivation. Ms. Yadav speaks about being involved in a consultation for designing the Computer syllabus with the SCERT, where she felt her voice was heard as teachers pushed for reasonable expectations. Being involved in the process of drafting the curriculum was empowering and gave her a sense of ownership. And she is looking forward to "teaching a syllabus that we have created together" next year.

VIEW FROM THE LAST-MILE

"No teacher can teach effectively without being sensitive to the needs of her students"

Shalini Chandra

My Motivation

I simply love to teach. Enabling a student to understand a lesson really well gives me the greatest satisfaction. The bonds that I build with my students have motivated me always and have kept me going. I have taught students of all ages – from pre-nursery to graduate level and have loved every minute of my career.

Quality learning, for me, means a good understanding of the concept that has been taught. A simple measure of quality learning would be the student's ability to expand and apply the acquired knowledge to related concepts. The student must be able to relate the learning to his/her own life, and think critically and go beneath the surface meaning.

If I am teaching the three states of matter, I would only expect the students to enjoy looking at all the things around them with this angle. And if I am teaching a lesson about *Jhansi ki Rani*, my students would not learn it just like a story and memorise the relevant dates. That would not be 'quality.' I would discuss her struggles and triumphs not as a queen but as a woman. I would encourage my students to relate the events to the present day and urge them to explore the social pressures that are as strong today as they were in her time.

Shalini Chandra is Director, Pedagogy, at the Study Hall Education Foundation, Lucknow

Improving Learning Levels

All students are not alike in any class or group. My aim is to first make everyone understand the basics. Then I give more challenging tasks to the students on a higher level and help the ones who take time to grasp. If the class is learning about the Himalayan ranges, I would be happy if the whole class understands the three levels of Himalayas and can talk about the major rivers and the flora and fauna. I would expect the fast learners to find about the tourist attractions and try to learn more about the other great mountain ranges of the world. Once a 'below average' [personally I am against quantifying learning] student understands the basics and manages to ask one intelligent question, I would be happy. Without applying any pressure, I generate interest by using art, music, and drama – generally going with the theory of multiple intelligences.

Being Sensitive to Student Needs and Backgrounds

Our Foundation is reaching out to so many different types of students-children from affluent homes, children with special needs, students who can't cope with regular boards, children in rural areas, out of school children and girls in Prerna school, who come from extremely humble backgrounds.

No teacher can teach effectively without being sensitive to the needs of her students. This is a very challenging task but the teachers are trained, guided, encouraged, and helped to take this challenge in their stride. The biggest challenge is understanding the social context, the mindset of the students and their previous learning.

Let me elaborate: the teachers in Prerna know the family histories of all the girls they teach and the girls trust them more than their own family members. Though empowerment is built in the core curriculum, and the teachers are supposed to talk about our oppressive social structures, no teacher ever makes derogatory comments about their social customs, beliefs or their families. The girls have been brought up to think that a good dowry ensures their happiness after marriage. The teachers try to change this mindset gently but firmly. If a girl has a problem, it is given priority over regular teaching and help is provided.

In our Non-Formal Education Centres [NECs] for out of school children, the teachers follow the Foundation's policy that every child is worthy of respect. The curriculum is customized and their dignity is maintained. They don't sing "This is the way we brush our teeth." They are taught that teeth can be cleaned with neem twigs or salt too. They are made to recognise guavas, bananas, and mangoes instead of cherries and apples.

Evaluating Students

Quantification of learning is stressful not only for the students but for the teachers too because the teacher's performance is also under the scanner. There are so many factors that can and do go wrong when the assessments are few and far between. After middle school, the teacher has no choice but to follow the system dictated by a board. We at the Foundation firmly believe that continuous assessments are the best way to evaluate the students' learning level. To have an honest assessment and to discourage clichéd answers, the testing has to be creative and must require critical thinking on the student's part. Even very small children enjoy posers.

Every student learns the seven attributes of living things. They love being asked why the car is not a living thing even though it moves, breathes (air in tires!), eats/ drinks petrol, and excretes exhaust fumes!

The results show the level of understanding. The pace of teaching is regulated. The next lesson is planned better. The quick learners are identified and more challenging tasks are given. Even those who struggle to catch up have some strengths. Those are identified and highlighted to boost the student's morale. The results of the assessments are never used to brand the students as bright, ordinary or dull.

Challenges at the grassroots-level

Through my experiences, I have encountered several challenges and questions that policy documents don't address adequately. Some of these include:

- KGBVs are not supposed to turn away any girl if she satisfies the age and financial criteria for admission. Most of these girls are dropouts or barely literate. Teachers are expected to make such girls cover the 5-year primary course in six months. If they want to study beyond class 8 they have to sit for the same board exams like everyone else.
- The NIOS board was established to have flexibility in terms of the time of examinations but no compromise was made with the standard. But despite it being a fully recognized government board, students passing exams through NIOS face difficulties in getting admissions for higher studies.
- There is no provision for teachers in rural and semi urban areas to be exposed to good teaching practices. The schools lack infrastructure. For example, majority of primary and middle school children have Computer as a subject but they have never touched a system in their lives.

- Text books are written in tough, formal language with lots of technical words. Most of those words in my opinion can easily be replaced by conversational language that we use every day. The students find it difficult to grasp the concepts not because they are not intelligent, not because they are not applying themselves but because the language is intimidating. Their vocabulary is poor and they don't have access to books other than the textbooks. All this promotes rote learning which only helps in passing exams but these students never feel on par with their urban counterparts.
- Why can't we have another board customised to the needs of the vast majority of our students coming from rural or underprivileged backgrounds? And if we ever have one, we must give it the same respect as we give to CBSE or the state boards.

CHAPTER FIVE

Developing School Leadership for Quality Education

Sameer Sampat & Anne-Munt Davies

Manikyam Malla was a teacher for fifteen years before she was given the role of principal of the Andhra Pradesh Social Welfare Residential Education Institution Society (APSWREIS) School in Garugubilli in 2013. Her government residential school has twenty-three staff members who collectively house, feed, and educate more than six hundred girl students from economically disadvantaged backgrounds, twenty-four hours a day, seven days a week.

Santosh Sharma similarly had been a teacher for twenty years before taking up the post of principal of New R.D Public School, a government recognised budget private school operating in East Delhi. She leads a team of eighteen teachers who serve more than four hundred students from underserved communities. Her students each pay between Rs. 200 to Rs. 500 per month in tuition fees, though most of her students are children of day labourers, so Santosh is constantly adjusting and waiving fees to both balance the books and ensure that all of her students have access to the education they deserve.

As principals, Manikyam and Santosh have to conduct activities that they did not have much experience with as teachers, such as managing the constant flow of contractors who provide services including transportation, construction, and food to their schools, regularly traveling three to four hours to meet with government and political officials, fielding complaints from parents, and managing the needs of their teachers and students. In the midst

Sameer Sampat and Anne-Munt Davies are respectively the Executive Director and Programme Director of the Indian School Leadership"

of this, they must also do the core job of any school leader, overseeing the academic progress of all of the students in their schools. This includes setting an academic vision for the school, focusing on the professional growth of teachers, collecting and using data to make decisions, and leading the development of the school curriculum. In order to perform this job well, principals must have expertise both in operations and academics, be self-reflective, lead by example, and be good communicators who can lead a team of people toward a shared goal.

Current Status of School Leadership in India

Manikyam and Santosh's job as principal is difficult, and while their school circumstances may be exceptional, their struggle as the leaders of schools is unfortunately not unique. India has largely overlooked the space of school leadership, and only recently have schools and governments begun to introduce measures to improve the selection, management, and training of school leaders.

Thirty years ago, the National Commission on Teachers 1983-1985 recognised that due to the importance of the leader of the school, "personal competence and the degree of motivation and commitment to the project should be the only consideration[s] in making this appointment." However, in practice today, school leaders still are appointed primarily by seniority of tenure as teachers.

Currently, school leaders in India are inundated with administrative duties and are not expected or supported to perform academic duties. A 2002 study by Professor R. Govinda, the Vice Chancellor of the National University of Education Planning and Administration (NUEPA), examined the role of head teachers in six Indian states. It found that these leaders played roles that were almost exclusively administrative and were typically not involved in any school development planning such as influencing the course of study or teacher assignments. While the autonomy given to leaders, or lack thereof, is a significant cause for this trend, another less obvious but equally important reason is that leaders may themselves feel more comfortable with the administrative aspects of their role. This is because administrative tasks do not require the specialised skills or content knowledge necessary for the academic and managerial components of the position.

Principals who have largely been teachers their whole careers are not prepared or equipped for a job that requires them to lead a school that produces high levels of learning. Currently, there is no additional credential or post-graduate degree that is required to be a school leader as long as one is qualified to be a teacher. Additionally, school leaders undergo minimal in-service training once they are appointed. District Information System for Education (DISE) data highlights that the total days of in-service training head teachers received in the 2009-10 academic session ranged from zero to eighteen days. In some of the larger states such as Bihar, Uttar Pradesh, and Rajasthan, school leaders only receive two days of

training per year (Dhawan, 2014). Leaders, while crucial to the school's functioning, are not provided with sufficient opportunities to develop the expertise required to lead a school.

Importance of School Leadership

It is no exaggeration to say that how leaders of schools – principals, headmasters, head teachers, and school management – perform will impact the future of the nation. Many studies have shown that education is vital both for economic growth of a nation, as well as for allowing individual citizens to benefit from this growth through improved employment outcomes (Muralidharan 2013). Currently, the 2013 ASER report shows that more than half of fifth standard students cannot read a second standard text and PISA ranks Indian students 72nd out of 73 participating countries (PISA, 2009). The need to improve India's primary and secondary education performance could not be more urgent.

Research on the importance of school leadership suggests it could be the key lever in transforming the education system.

After studying head-teachers in India and abroad, Stanford University Professor Nick Bloom and his colleagues (2012) write that a one point increase on their scoring of school management practices is associated with a ten percent increase in student performance. In order to assess schools on their management practices, the researchers conducted interviews with over 1,800 principals across eight countries. These interviews were conducted by staff who did not know ex ante about the school's performance scores and were comprised of open-ended questions which allowed them to rate school management on their ability to operationalise practices to improve learning, set and monitor targets, and manage people.

A study by New Leaders shows that the effectiveness of the school principal – just one person – accounts for twenty-five percent of the impact that schools have on student learning (Marzano, 2005). This study is a meta-analysis that combines the results of sixty-nine previous studies in this field conducted from 1978 to 2001. The typical study used in this analysis assesses the effectiveness of the principal by surveying the teachers in the school about the principal's leadership skills in many areas that include communication, people management, and focus.

Additionally, much research has shown that it is almost impossible to have a high-performing school, particularly in underserved communities, without strong leadership. In 2010, McKinsey and Company reviewed Ofsted reports in England and found that for every one hundred schools with good leadership and management practices, ninety-three schools had good student performance, however, for every hundred schools with poor management just one school had good student performance. The Wallace Foundation also commissioned research across nine states covering 180 schools in North America, and

found that there was not one case of a school with improved outcomes in the absence of strong leadership (Lettiwood, et al, 2010). Furthermore, Eric Hanushek and his colleagues (2012) show evidence that suggests that the ability of the principal matters most in schools serving the most underprivileged students.

Effective Models of School Leadership Development

In order to understand how school leaders can be developed to have the skills and knowledge to impact student outcomes, it is important to understand international best practice in this area. A relevant, well-documented example for India comes from how the school system in London used effective school leadership development to dramatically improve their schools. Published in 2014, *Lessons from London Schools*, investigating the success, unpacks and analyses the various components that generated a dramatic improvement in London schools from the start of the 21st century to the present day. This study is of particular interest for India because it is contemporary, the data is very recent, it is set in one of the most diverse cities in the world with all its attendant challenges, and most significantly, it shows the impact education can have on breaking the link between poverty and achievement, and increasing opportunity for the most deprived children and young people. But above all it shows what is possible when school leaders are empowered to be system leaders, both within their own schools and with others.

The London story study sets out to answer the question of why:

- London schools have improved so dramatically since 2000, faster than anywhere else in Britain.
- Students aged 16, in the most deprived neighbourhoods in London are now most likely to reach, or exceed, nationally expected levels of attainment in at least five subjects including English and mathematics.
- Schools serving the most disadvantaged students are more likely than schools in higher income areas to be graded as Outstanding [1] by Ofsted for the quality of teaching and learning.
- Schools serving the most disadvantaged students are more likely to have Outstanding leadership than other areas of England.
- Aspiration, if measured by the number of students from the most deprived areas of London going onto higher education, is also rising rapidly.

As the article focuses on the strategies that had the greatest impact on leaders and leadership in schools, the leadership practices that made most difference to transforming the culture of expectations and skill levels in schools, we can ask whether the policies and strategies employed in London are replicable in India.

[1] *"Outstanding" is the highest rating that a school can get on the Ofsted evaluation framework, which is the system that the English Department for Education uses to monitor and evaluate its schools.*

In order to answer the questions posed earlier and to see the transformation and growth i is important to examine the starting point and context.

In the late 90s, the culture of underachievement was embedded. Head teachers and teachers were vilified in the press, understandably because standards of achievement and behaviour were so low. Low expectations and a lack of accountability permeated the system. Local authorities also lacked effective leadership and often the knowledge or skills to support their schools. Many parents, often of modest means, did all they could to send their children to fee paying schools or sent them far across the city to attend more successful schools. Attracting any teachers to come and work in Inner London schools was a challenge, while attracting ambitious, talented ones was near to impossible. The same story existed for school leaders. London was failing its children.

Fig 1: National Exam results for 16-year olds by regions, 2001

Proportion of pupils achieving 5 or more good GCSEs

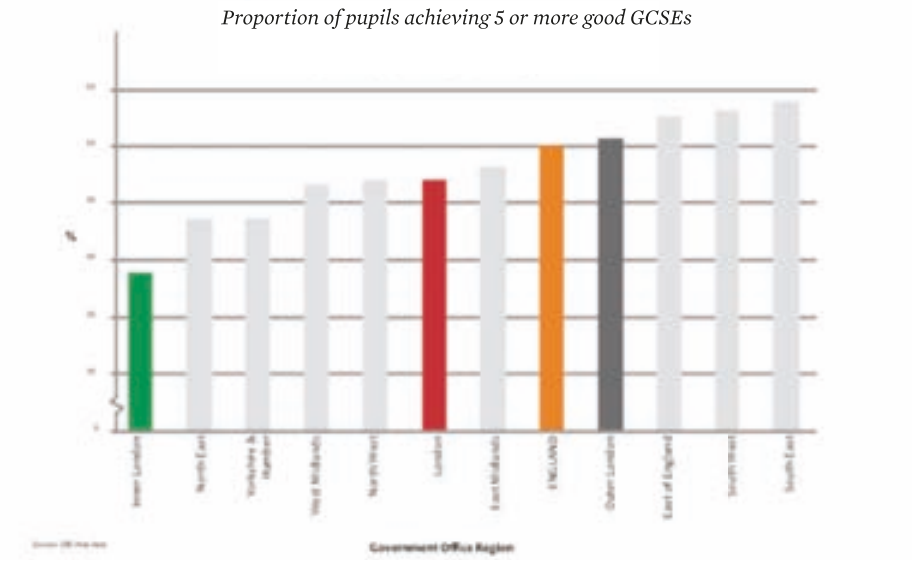


Figure 1 shows that in 2001, students aged 16 in Inner London, the borough with the highest level of deprivation, performed worst against national expectations when compared to all boroughs in England and London.

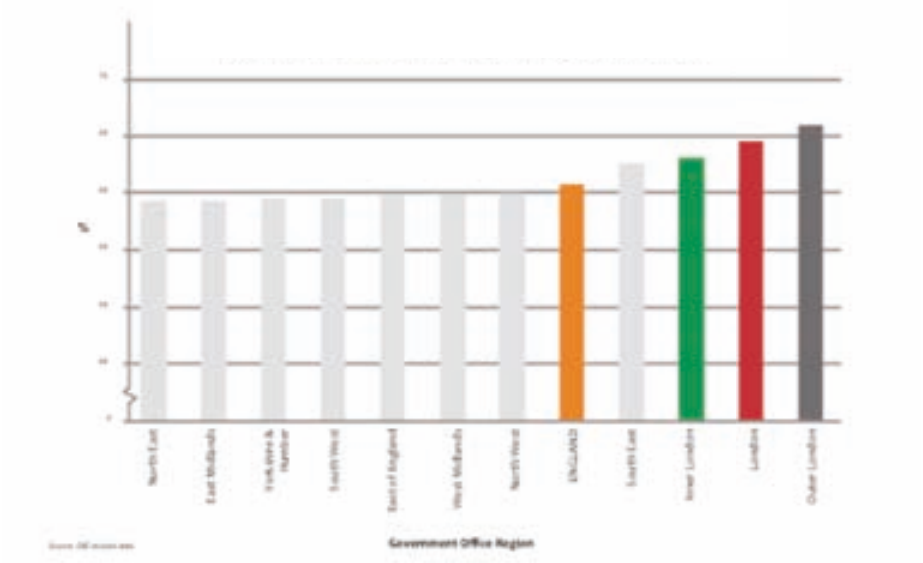
One teacher interviewed as part of the London story described her own experience as a teacher in London schools in the 1980s and identified a prevalent culture of low expectations and poor leadership: "Staff didn't talk about education, the head teacher hid in the office because too frightened that there might be a disruption! And people just said, well [...] what can you expect?'"

A head teacher interviewed as a part of the London story reported, "Schools in the early

2000s had, in some cases, a weak professional culture... there was a complacency about underperformance and there was little focus on pupil outcomes. They also lacked some of the technical skills needed for high performance, the skills referred to as undeveloped related to pedagogical expertise, understanding about how children learn and data literacy."

Fig 2: National Exam results for 16-year olds by regions, 2001

Proportion of pupils achieving 5 or more good GCSEs Including English and Mathematics



So what are the factors that led to London's dramatic improvement as seen in Figure 2?

Theme 1: Leadership by Policymakers who Support Schools and School Leaders

Education had been declared a political priority a number of times before, but the difference in the early years of the century was in the paradigm shift that occurred and translated into action. The improvement began with a recognition of the problem and a political, moral, and ethical determination to change, plus the appointment of strong, experienced individuals to lead the strategy for change in the capital. Though leaders advised change from within the schools in order for school leaders to become system leaders, capacity building in and among schools was key to change and improve sustainably.

The early 2000s saw the introduction of a range of strategies, all of which were designed towards being sector- and practitioner-led. In 2002 - 2011, The London Challenge began with the closure, and then, reopening of failing schools as academies. Teach First, which brought high flying graduates into schools, arguably had an impact not only on individual

schools but also the status of teaching as a profession. The growth of successful academies, the introduction of systematic performance management for teachers and head teachers, fast track systems for aspirant leaders, and a strengthening of governance in schools, all contributed to this progress.

School leaders began to examine the ways in which successful businesses developed a culture of continual improvement, and to incorporate these into their own management and leadership. Rigorous monitoring and evaluation continued through Ofsted inspections, but also included a stronger focus on support and scrutiny of the school's own capacity to know its strengths and weaknesses.

This shift towards recognising excellent leaders and leadership, and using effective leaders to build capacity within the system has been significant in developing and supporting school leaders to sustain improvement in their schools. Having a trusted peer to talk openly with, learn from and work closely with on difficult areas of change management has been one of the most effective strategies for sustaining leadership development in London and the nation.

Theme 2: Developing School Leaders and utilizing them as System Leaders

This notion that a community of schools could be responsible for its own collective development relies on the pioneering work of the London Challenge and the National College of School Leadership (NCSL).[2] Influenced by the work of writers such as Michael Fullan, London Challenge explored the concept of the 'system leader': an experienced head teacher with the ability and drive not only to lead one school but also contribute to the leadership of a group of schools, and to the wider education system.

Rudd and his colleagues endorsed the success of London Challenge's emphasis on system leadership. Significantly, they concluded that the work of head teachers as consultants to groups of other schools had benefits for the 'home' school of the head teachers: 'Inviting staff from other schools to visit the "host" schools encouraged constant self-evaluation and a more critical appraisal of the processes and teaching approaches they used.' (Rudd et al., 2011: 39)

'In some ways the Leadership Strategies represents a new form of school improvement. Previous models have tended to rely, at least in part, upon an outsider's input, a consultant or an expert advising the school on how to improve. There was a tendency for initiatives to be 'done to' schools rather than to be 'done with' them. The key change, evident in both Teaching Schools and NLEs, has been the importance of peer-to-peer relationships and a stronger

[2] *The NCSL has now been renamed the National College of Teaching and Leadership (NCTL)*

emphasis on 'real' practitioner-based school contexts, with school staff responsible for the delivery of school improvement strategies at all levels.' (Rudd et al., 2011: 40)

Theme 3: School Leadership and Its Moral Influence

The successful shift came through changing school leaders' mindsets; the National College of School Leadership (NCSL) and recognition through National Leaders in Education re-energised a sense of moral purpose and an enthusiasm for sharing knowledge and skills in order to support another school leader. While London head-teachers had networked prior to London Challenge, the focus had been on defending territory or challenging the Local Authority rather than on knowledge sharing. Head teachers interviewed described how the idea of school-to-school knowledge transfer depended upon building a new kind of 'moral capital', so that successful schools felt that they had a duty to assist each other in succeeding for the sake of their students and the community.

Training school leaders and teachers to use data was also a very significant part of the improvement strategy. School leaders began to use data, confidently and skilfully, to show what was working well in classrooms, which students were learning, and then to work with teachers and students to focus teaching and learning strategies on what the data showed. Data driven improvement strengthened accountability and developed a culture of 'no excuses', but it also provided encouragement and validation for teachers, leaders and students.

The Impact

London schools are still very far from perfect, but the improvements because of leadership at all levels, and cohesion in and between schools have had a very powerful impact, as evidenced by the following remarkable statements.

> *'The [...] 2011 data showed that the poorest one per cent of children by postcode do as well as children in the average postcode by wealth in the rest of the country. That's a pretty stunning statistic.' (Political adviser)*
> *'[London has] exceptional density of outstanding schools and very effective schools, some exceptional leaders and systems leaders, architects of new developments across London and nationally. [London has had the] biggest rate of improvement and highest outcomes for children. [It's] the only global city in the world where that's the case.' (Policy specialist) (Baars et al, 2014: 37)*

After thirteen years of intensive work to build leadership in London schools, the key features of the city's successful schools, today, are:

- Self-confident, highly skilled and well-motivated staff.
- Highly effective leaders and leadership teams who act strategically, focus on learning and data, and who have developed systems which enable them to spend very little time in fire-fighting and crisis management.
- High levels of data literacy at leadership levels and through the school.
- Strong links between schools for the purpose of improvement and joint practice development.
- A culture of high expectations and "no excuses" that resonates at all levels - individual, classroom, school, Local Authority or Academy chain, and at National leadership level.
- Strong accountability coupled with high levels of support.
- Optimism that challenges the inevitable link between poverty and low outcomes. A strong moral focus on their responsibilities as leaders.

Conclusion

"We are beginning to know what we need to do to reform education systems successfully. Now the challenge is to actually go about doing it. And the question for us is do we have the courage, the persistence and the ambition?" *– Michael Barber*

Revisiting Manikyam and Santosh

Manikyam, the APSWREIS principal in Garugubilli referenced earlier, is starting to show the type of progress that occurs when a leader takes focused actions to improve the quality of education being provided to students. The Secretary of APSWREIS, Praveen Kumar, who is also a former IAS officer, decided to invest in the school leaders in his network. He selected a cadre of leaders based on their potential to develop leadership skills and Manikyam was one of them. He then sent Manikyam to the India School Leadership Institute's (ISLI) training fellowship, where Manikyam was part of a cohort of school leaders focused on improving the quality of education provided to their students. The cohort learned and shared best practices on topics that included using data to make decisions in schools and structures, which can be used by leaders to identify and nurture practices that promote quality teaching and learning amongst their teachers. In the past year, her school has grown tremendously. A higher percentage of students have passed the board exam than before, but perhaps a better indicator of quality improvements

can be seen in the way the teachers have been feeling more supported by their leader, in how students have been taking ownership over the school environment by forming their own student government, in students asking and answering higher order thinking questions, and parents of students feeling more satisfied with the education being provided.

Santosh, the budget private school principal in East Delhi, herself has been involved with many different organisations and is always trying to improve her skills. She was looking for a programme to help her develop as a leader, but unfortunately there were not many opportunities available to her. When ISLI began in Delhi, she joined during the initial cohort. Through ISLI, Santosh and her peers were exposed to a number of schools in Delhi which had model systems on areas such as compassionate accountability and bringing alive a school's vision and values. In her school, third-party evaluators have shown that her students have made above-average growth in math, language and critical thinking over the past year. This is possible because Santosh herself has run regular training sessions for her teachers to help them become more prepared for class every day.

Courage, persistence, and ambition for all children are key drivers for making change happen in India. It takes strong and determined leadership at all levels to achieve the vision coupled with an unrelenting will to continually sustain improvement, despite challenges. But in order to have an impact, there has to be an acknowledgment that the will to improve must be coupled with skill- building and knowledge development. And, as in the earlier story of two Indian school principals, there are currently far too few opportunities to develop even basic leadership skills, before they are thrust into the demanding role of school leadership.
"So what can we learn from their experience and a study of London schools for India?"

Learning from the work done in London, and looking at its early success in India through programmes like ISLI, there are key policy themes that emerge. One relates to the supervision of school leaders, at the district level for example. Local policymakers should ensure that they do not serve as impediments to change but are sufficiently skilled, experienced, and committed to assist school leaders in their journey to improvement. A second is in recognising the power of a "bottom-up" transformation where highly effective school leaders are developed and recognised, to serve as system leaders, supporting other schools to improve. A third and related theme is the recognition of the power of school leadership and the moral influence it can have on a community.

KEY POLICY INSIGHTS

• School leaders and principals who have largely been teachers their whole careers are not adequately prepared for a job that requires them to lead a school that produces high levels of learning. In addition, school leaders must contend with several administrative challenges and responsibilities. Currently, there is no additional credential or post-graduate degree that is required to be a school leader as long as one is qualified to be a teacher. In addition, school leaders undergo minimal in-service training once they are appointed.

• Addressing such shortcomings requires a coordinated approach that focusses on leadership by local policymakers to support schools and school leaders; using school leaders as system leaders; and finally, infusing greater accountability and moral responsibility for the work of a school leader. Some policy measures in line with such an approach include:

- *Training to empower school leaders to be leaders of learning in their schools, as in order to improve student outcomes, school leaders need the skills and expertise to support their teachers.*
- *Train school leaders in self-evaluation so that they can use it to build capacity in their schools, develop a shared view of quality, have an accurate knowledge of their strengths, and weaknesses, and evaluate their own progress toward self-identified goals.*
- *Incentivise publicly such training by recognising and promoting leaders who have used strong leadership to improve their school's performance.*
- *Partner with external agencies to provide implementation support and capacity-building where required, in order to ensure that such opportunities are widely available.*
- *Develop an understanding of the need to use data at all level – nationally, through to school and classroom level. Train school leaders and teachers to generate and use data to promote encouragement, validation, and shared accountability.*
- *Use data at the system-level to look for improvement and identify emerging good practice in leadership, so that effective school leaders can support others to improve*
- *Use this information to build systems, formal and informal which enable teachers and leaders share good practice and build communities of learners.*
- *Look for, and develop leadership at all levels, which is consistent both over time and in its practices. Recognise and certify such leadership, allowing it to serve as a model for the entire system.*

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View From The Last-Mile:

The Role of the School Leader

Rajesh Malhotra

"Not many budget private schools are able to 'walk the talk'"

While every Budget Private School (BPS) has now started thinking about improving the quality of work that happens within their four walls, not many are able to walk the talk. Based on my experience, knowing what quality education means, and making it possible through the classrooms of your school are two separate things. Of course, the way to go is to first know what separates quality education from ordinary education, and sadly many captains of the BPS ship don't even know this! After this, school leaders need to figure out how best they can make that happen in their schools.

I recognised long ago that a lot of resources are just not available to schools like ours and worse, they will continue to evade us for many years to come. Needless to say, this left me disturbed and confused about the purpose of running a school where I couldn't do much to provide quality education, leave alone accelerating access to it. Soon I realized that almost everything needs to either be upgraded, improved upon, or simply changed. Not knowing how best to move ahead, but also not being one to take things lying down, I started confronting situations that I found were just not acceptable. One confrontation led to the other, and the staff began showing their discomfort – not knowing what needed to be changed, and worse, not realising the need for change.

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Soon I realized that this was not the way to do it and that I needed to learn better ways of bringing about the much needed change. As someone who attended several conferences on social and political issues, I ended up at the Centre for Civil Society, and soon, founded the National Independent School Alliance (NISA). One thing led to another, and I was among organisations such as STIR, ISLI, the Central Square Foundation, the Teachers' Foundation, and Indus Action. A lot of learning happened, which I tried to share with my staff. Though a lot of sharing and discussion was also happening earlier, it now had context and content in place. This allowed us to push aside generalities, and have more concrete discussions around topics that were directly related to better methods of teaching and better learning outcomes.

Some of the lessons I have learnt from this experience include:

- School leaders need to have an understanding of the socio-educational development of children/society. They need to have empathy, an understanding of the macro picture and a vision, even if it is not very concrete.
- Next, school leaders also must undergo training. From knowing what the sector expects from them and how they should define their role to what skills they should build – they need to learn all of these things.
- Any step taken – whether it is wrong, ordinary, or right – will lead to some change. But the right steps lead to sustainable change.

"I hold myself directly or indirectly responsible for everything that goes on in our school"

As a School Leader, I consider myself to be at the centre of it all. I hold myself directly or indirectly responsible for everything that goes on in our school – taking logical and calculated steps towards improving one's knowledge about leadership; facilitating teacher/teaching quality improvements through various interventions; improving upon the infrastructure of the school; and last but not the least, creating or providing situations for student expression and adding variety to the teaching-learning process.

There are quite a few steps that I'm proud to have taken in the past 3-4 years. From becoming a founder member of NISA to being actively involved with a range of organisations – I have been there and done that! Each of these associations has taught me a lot and as I keep saying, 'I can never go back to where I was 4-5 years ago.' As a result, teachers are more receptive now and there is ready acceptance of change. Even students feel this, and come forward and communicate this to me every now and then.

But has it all changed to the extent that I had aimed for or expected? No! There's a lot that

needs to be done so that teachers deliver quality services each time they walk into the classroom. The old baggage is still there and the cultural change that I was expecting is yet to happen. I guess while there has been a lot of information- and knowledge-sharing by me and by organizations like STIR, ISLI, Teachers' Foundation, etc., it has not led to sustained learning or practices that could add to the learning outcomes of our students. I guess a more robust system of teacher training/workshops leading to measurable outcomes is what I need to look at now. Another major learning is that it is very difficult to offload the old baggage, and that people, including teachers, will hold on to their comfort zones for as long as possible. Last but not the least the training/knowledge/skills that the teachers come in with are very ordinary to say the least.

"The teacher's role in improving quality of education is the same as a film directors' role in getting the best out of his actors"

The role of the teacher in providing quality education and improving learning outcomes is all-encompassing. In fact, a teacher who needs to be reminded of this should feel hesitant in calling herself/himself a teacher. The teacher's role in improving quality of education is the same as a film directors' role in getting the best out of his actors. Yes, teaching can be a monotonous activity, and there is and should be a need for motivating them through regular bursts of fresh energy in the form of training, peer-teaching, re-evaluating the outcomes, and of course, recognising and rewarding the good work that is being done.

Also, being a teacher myself, motivating teachers by exemplifying good practices and showing the outcomes becomes easier. An open, accessible, and encouraging system by a school leader is the best way to create an environment for teachers to innovate. Also, bringing in external energy in the form of visits by experts is very useful.

Bringing about change and enhancing the skills of teachers, particularly in the BPS system, is a very tiring and frustrating job, because of the ordinary baggage that they seem to carry and more because of the general lack of exposure in their careers. Given this, setting the context and making the staff aware of the 'big picture' becomes an important responsibility of the school leader. Every school leader should know that he/she needs to be at it continuously and must never appear to be giving up easily. This alone sends a strong message to the people he/she has to work with.

"It would be beneficial if the high-end and elite schools of India open up to schools like ours"

Though in a small way, partnerships with other schools has been facilitated through STIR, which partners with our school in encouraging educational innovations and the practice of

these innovations by teachers across the BPS sector. However my view is that since schools that belong to the BPS sector are more-or-less similar in their operations and outcomes, it would be beneficial if the high-end and elite schools of India open up to schools like ours.

Exchange programs with high-end schools play a valuable role. Though I'm yet to do this, my priceless visits to some glorious and well-acclaimed schools (courtesy of ISLI) have left an impact on my mind, and I definitely want to explore this opportunity to get more and better from my teachers.

"Need of the hour is a huge collaboration between school associations, government bodies and private players"

My interactions with government and regulators have mainly been through emails and letters, and more so after the RTE act, specifically about the 25 percent reservation for the economically weaker sections. That such interactions get repetitive and eat into your managerial/teaching time is a given. And sadly the gap between the government and school system is yet to be bridged. The need of the hour is a huge collaboration between school associations, government bodies and private players to agree on the ways and means of accelerating access to quality education in a time-bound manner.

3

Access

CHAPTER SIX

Improving Quality in Government Schools: Teachers as a Solution

Sharath Jeevan, Vinod Karate, James Townsend

As we approach the September deadline to determine the world's new set of development goals, it is hard to ignore the stubborn persistence of the global learning crisis. Despite the impressive growth of the number of children now enrolled in school – even by the most conservative estimates over 250 million – children across the developing world are learning very little.

One in every five children in the world is Indian, so if the world is to achieve its post-2015 ambitions for children's learning, then India (and especially Indian public schools) has a key role to play. The challenge is daunting both in terms of scale and the extent of improvement required to ensure all children in India learn at even basic levels. There are 1.4 million elementary schools in India. Nationally, around 60 percent of children attend public schools – a figure that has been declining rapidly over the course of the last decade (Singh, 2015).

The current figures about children's learning in India are depressing. Young Lives India, a longitudinal study, found a 20 percent decline in mathematics test scores between 2006 and 2013 for 12 year olds attending government schools. Interestingly, there was also a (smaller) decline for children enrolled in private schools (Singh, 2015).

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How Can Learning Be Improved In Government Schools?

How can learning be improved in Indian public schools? This is, of course, a very complex and challenging question but one that state governments must focus – as some already are – on answering. As Rukmini Banerji (2015) recently pointed out, *"the big question is which path(s) to take and what to prioritise"*. She lists six prominent 'theories of change' that governments could focus on. These include enforcing RTE input-norms for better outcomes; stronger governance and administrative control; better incentives for teachers; investment in developing teacher capacity through stronger teacher training programs; and finally, fixing misaligned pedagogy and fundamentally addressing the issues at stake in the 'teaching-learning' process. In addition, she also refers to the theory that the child's socioeconomic and familial background influences learning outcomes.

If they are to restore trust in public schools and reverse the trend of parents opting out of the system, then governments must focus on what really counts in improving learning. Our view in this regard, is that it is hard to ignore the central role of teachers in this learning crisis. The quality of teaching that children receive has a huge impact on whether or not they learn. As Hanushek's (2014) research has shown, a child who is taught by a highly effective teacher "will get a gain of 1.5 grade level equivalent while a bad teacher will get 0.5 year during a single academic year." The results of the PISA assessments similarly demonstrate that systems that invest significantly in the recruitment and ongoing development of their teachers come out on top.

However, government-school teachers do not operate in a vacuum, they work in a system that significantly impacts – and often hinders – their ability to be effective in helping children learn. Simply focusing on developing in them individual "teacher skills" (although this is important) will not lead to the required improvement if the environment in which they work is not also significantly altered.

In private schools, teachers can be removed easily if the head teacher or school owner is not happy with their work (whether fairly or not). This is not an option for government schools where there is a need to focus on ensuring all schools have the best possible teachers. There is certainly a case for strengthening the say that Principals and School Leaders have over who works in their schools but this would need to be done very carefully. The lack of teacher development and very high teacher turnover in affordable private schools, and lack of stability this creates, serves as a stark warning for any government considering moving towards this model of teacher management.

So, rather than simply viewing government teachers as 'villains' who should work harder or get fired, or as individuals who just need more training, this essay looks at the complex interplay between teachers themselves and 'the system' within which they operate. Based on our work at STIR education, we suggest a number of avenues that may prove fruitful in enabling government teachers to be more effective, and thereby, help improve learning outcomes across the public school system.

Revisiting the 'theories of change' listed above, several of these are – directly or indirectly – concerned with teachers. While teacher incentives, training, and fixing misaligned pedagogy refer directly to the role of teachers, RTE input-norms, governance and administrative control, and the socioeconomic backgrounds of children affect the ecosystem within which teachers operate. Consequently, while analysing the role of teachers in fixing the quality of education in government schools, the solutions we offer look at teachers' individual skills, their relations with policymakers, and the backgrounds of the students they teach.

Seeing Teachers As Part Of The Solution

Having worked intensively with 10,000 teachers across 15 states in India and 48 districts in Uganda, STIR Education has come to realize that instead of being seen as the problem, teachers can be made the solution – by being empowered and supported by their education systems to solve the learning crisis for themselves. But to realise this vision, we'll need a very different approach – literally a "New Deal" between teachers and the education system they inhabit. This New Deal is based on mutual respect and accountability. Four key elements of such a "New Deal" will be really critical, if we want to consign the learning crisis to the realms of history.

Enhance teacher motivation and create local tipping points

First, re-ignite the professional spark

In a 2005 piece, Ramachandran recounts the answer given by a teacher in response to the question 'who is a motivated teacher'? She was told that "A 'motivated' teacher comes to school every day, does what he is told and provides information the higher-ups want!"

This is symptomatic of a system where, in general, teachers have been entirely disempowered and where gathering data and information for the 'higher-ups' (rather than helping children learn) is seen as a teacher's most important task. In general, teachers are viewed as a means of implementation, resources to be deployed for all kinds of duties, rather than as professionals who can make a serious contribution to improving learning. The importance of education (both for individuals and society) has risen, but the status and morale of the teachers has not (Mooij, 2008). Teachers are given no recognition for hard

work and no opportunity to share their experiences as professionals. As Majumdar (2005) notes, in India, "almost paradoxically, teachers are both controlled and neglected." Teachers need to be given the 'permission to innovate', the opportunity to be genuine professionals. To be effective teachers in the 21st century, they need to be 'knowledge workers'. However, "people who see themselves as knowledge workers are not attracted by schools organized like an assembly line, with teachers working as interchangeable widgets in a bureaucratic command-and-control environment" (Schleicher, 2012).

At STIR, we start our engagement with teachers with the positive (rather than the deficit model that underpins most teacher training). We have found that asking teachers to share their 'micro-innovations' (their own ideas and practices that they have developed to improve learning) generates huge positive buzz and helps to bring back their intrinsic motivation. Many teachers have "internalised" the "utterly centralised set-up" in which they work (Mooij, 2008). Sharing their own micro-innovations and being recognised for doing so is the first step towards teachers being willing to take responsibility for defining their own professional goals.

Then, move teacher incentives beyond blunt "carrots and sticks"

A recent study finds that 23.6 percent of teachers in rural India are absent each day and estimates a "fiscal cost of teacher absence [of] over $1.5 billion" (Muralidharan, 2014). This amounts to "60 percent of the entire revenue collected from the special education tax used to fund SSA (in 2010)." Even when in school, teachers are often not teaching: one study found that only 60 percent of teachers present in school during an unannounced visit were actually teaching (Kremer, 2004).

Clearly, there is a challenge with teacher motivation and it is very costly – both financially and in terms of children's learning. One response to this challenge has been to see teachers as barriers to improvements in learning. Consequently, this problem is seen as requiring either heavy top-down accountability, or financial incentives to encourage teachers to attend school more regularly and teach while there. Such approaches have also been shown to be effective in trials. Duflo and her colleagues (2008), for instance, incentivised higher teacher attendance by requiring teachers to photograph themselves with their students twice a day (using tamper-proof date- and time-stamped cameras) and linking attendance to higher pay. This led to a drop in teacher absence by 20 percent and improved learning outcomes.

However, the major challenge for policymakers with such approaches is that they are politically very sensitive and virtually impossible to scale and sustain. Performance-based pay is both very controversial (it would certainly face major opposition from teacher

and its efficacy is contested. An alternative approach is to design policy mechanisms that get teachers to want to teach (and teach well) and to create an environment that enables this. As a J-PAL Policy Paper states, "Is an appreciated or contented teacher less likely to be absent? If so, a programme carefully designed around a teacher's situation could be successful without being financially expensive."

The 10,000 teachers in the STIR Teacher Changemaker Movement tell us, time and again, that what they crave and value most is recognition at the local level: from other teachers, parents, and local officials. At STIR we have therefore developed an aspirational pathway – modelled on the Royal Colleges, in professions like medicine – wherein teachers begin their journeys with us as Associate Teacher Changemakers and can progress up five rungs all the way to Distinguished Fellow. We are also working on randomised control trials to experiment with a number of mechanisms to sustain teacher motivation. We will be testing, for example, what happens to motivation if the reward is to have your picture appear in a positive poster campaign in your village; or if you get to have lunch regularly with your local district official; or go on a learning visit to a neighbouring school; or have a letter sent to your family affirming the importance of your job to the community.

Ultimately, these motivators are much more enduring, cost-effective, and scalable for education systems – and they strengthen and reinforce the intrinsic motivation for teaching.

CASE STUDY

When approached to join a teacher change-maker network, Dr Indira, a teacher at a Delhi Tamil Education Association school simply replied, "Five more years." She was referring to the five years of service she had left before retirement. Like many teachers, Indira was happy to pass her years as a teacher and not take up anything extra. She saw no value in complicating her professional journey as in the past most efforts kept her out of her class (which she valued the most) and gained no real recognition.

Dr Indira eventually agreed to attend one of STIR's meetings and shared her idea: a simple but effective technique to help children who did not attend pre-school to cope with English language. She was surprised to see how other teachers like her were also finding many innovative ways to solve problems. She subsequently became a regular and the recognition she received from peers and other members encouraged her to scale her idea across the seven sister schools of the school association. She didn't stop there. With support from STIR, she connected to various phonics

content providers and created her own version of phonic material to suit her school and students. Her story was so inspiring that she got an opportunity to present her work at a global forum with Bill Clinton and Tony Blair in the audience.

STIR has encountered several such teachers who are working individually to find interesting yet simple and cost-effective solutions to support their children's learning. But most of them rarely share their practices within their schools, let alone neighbouring schools. It is crucial to try unleashing the energy of such teachers by offering them a neighbourhood platform to meet like-minded teachers and work together to improve learning.

Finally, allow teachers to collectively create a 'new normal'

In his seminal work, The Diffusion of Innovations (1962), Everett M. Rogers shows that:

> *"Most individuals evaluate an innovation not on the basis of scientific research by experts but through the subjective evaluations of near peers who have adopted the innovation. Those near peers thus serve as role models whose innovation behaviour tends to be imitated by others in their system."*

The implications for improving public education in India are clear: teachers are most likely to change their habits and behaviour as a result of learning from other teachers. As Michael Fullan (2011) shows, "for teachers to improve their practice they learn best from other teachers provided that these teachers are also working on improvement." By encouraging and supporting teachers who have begun to improve their practice to collaborate with others, a 'new normal' can be created and the system can 'tip' into a positive culture wherein teachers focus on improving their practice to improve learning.

At STIR, we have already seen this happen organically in schools: other peers see STIR teachers looking more fulfilled and supported in their classrooms, and ask how they too can join. But we also create incentive mechanisms between schools – teachers in the STIR movement are encouraged to reciprocate the support given to them by inviting others in their schools and neighbourhoods. They are also encouraged to talk to trainee teachers in their institutes: a 'vaccination' against cynicism early on is much easier than cure. This experience has given us confidence that social norms among teachers can change quickly and sustainably, if instigated by teachers themselves. And once tipping points are achieved at the local level, they can be elevated up to the regional and national levels too, as witnessed by the energy seen at the national teacher changemaker summits we run.

Create sustained, collaborative structures for training and skill development

In addition to improving teacher motivation, teachers' skills also need to improve in a whole host of areas, in order to improve learning levels. In Bihar, for example, over 10,000 current teachers failed the 2014 teacher competency test. To its credit, the Government of India, has recognised the importance of teacher development and made a significant investment towards it: the SSA, for instance, requires that teachers are provided with up to 20 days training annually.

However, as Ramachandran (2005) points out, the mismatch between teachers' needs and the training offered is "stark." Teachers are given little or no say in the content of their (usually one-off) training, and there is no link to their actual classroom practice. This sits squarely in opposition to what research shows are the factors required for high quality teacher professional development: it should be collaborative, supported by specialist expertise, sustained over time, focused on student aspirations and should explore evidence from teachers trying new things (Cordingley, 2012)

Enabling collaboration between teachers over an extended period of time is potentially one of the best investments that could be made in the Indian public school system. As Leana (2011) argues, systems very often greatly undervalue the "benefits of social capital" that teachers possess. Social capital, Leana explains,

> *"is not a characteristic of the individual teacher but instead resides in the relationships among teachers. In response to the question "Why are some teachers better than others?" a human capital perspective would answer that some teachers are just better trained, more gifted, or more motivated. A social capital perspective would answer the same question by looking not just at what a teacher knows, but also where she gets that knowledge." (Leana, 2011)*

Increasing teachers' social capital (which is developed by collaborative, sustained professional development of the kind outlined above) both improves student learning outcomes and improves teachers' self-efficacy. A study by Tschannen-Moran et al (2007) showed that "teacher collaboration is associated with increased levels of student achievement." Schleicher, referencing data from the Teaching and Learning International Survey (TALIS), shows that collaboration among teachers is related to higher levels of both self-efficacy and job satisfaction. In particular, teachers who reported that they participate in collaborative professional learning activities five times a year or more also reported significantly higher levels of self-efficacy" (Schleicher, 2015).

At STIR we support the development of social capital through our local teacher change-maker networks of 30 to 40 teachers who meet monthly to discuss issues they are facing

and work together to develop solutions. Through this process, teachers become learners again and develop inquisitiveness, hunger for improvement, and confidence that learning improvement is possible. They develop professional and 21st century skills (collaboration, communication, reflection, critical thinking) that will last them for a lifetime and that they can impart to their students. They also challenge each other to change mindsets about their children – specifically, that all the children they teach are capable of learning.

Once the social capital of these networks has been built and what Fullan (2008) calls "interactive professionalism" has become the norm, we find they can be very effective conduits for future skills-based training

> *"Earlier I used to be restricted to my own school and assume only I am doing a great job" so, says Asta Sa, a municipal school teacher in Delhi. "What I like is the fact that I have become a student myself after a long time" says Dr Raja Rajeshwari, a network teacher from Delhi.*
>
> *We find that as teachers finish their first year in teacher change-maker networks, their collective energy makes them hungrier for bigger solutions. Many NGOS feel that it's very hard to motivate teachers to adopt and sustain solutions. "The teachers do well in the training but it never really translate into class room in the real spirit" says a representative from one NGO partner. "It's more like they are forced to sit in the training and when it comes to adoption of what they learnt they lack the motivation or do it in a manner which is counterproductive."*
>
> *But various organizations who get connected to STIR-network teachers find that the engagement and responsiveness is very different from other teachers: "These teachers are usually eager and wanting to know the details. They seem to have tried many things together and want solutions which would actually work."*

Create 'policy change-makers' to improve the enabling environment for teachers

If there is to be a 'deep and lasting change' in teacher behaviour and classroom practice, then teachers need to develop real ownership of their new ways of working (Cordingley and Bell, 2007). The same is true of change of officials working to support teachers.

Coburn (2003) describes four 'dimensions' that must be in place for a change in any system to be scaled:

1. ***Depth:*** change must alter beliefs and norms of social interaction.
2. ***Sustainability:*** deep understanding of the principles of reform enables a greater ability

to respond to new demands and changing contexts; supportive environment also very helpful

3. ***Spread:*** the extent to which reforms lead to changes in operational structures and processes
4. ***Ownership:*** the reform cannot be controlled by the centre; ownership must transfer to local level people with authority to spread and develop the reform further in their area.

If the system is to focus on enabling teachers to improve children's learning, there must be a very strong focus on developing officials and providing them with understanding and ownership over efforts to improve learning in their area. Government teachers are understandably very concerned to please local officials. It is striking how often, when you ask teachers about their proudest moment as a teacher, they will share the specific moment and then immediately tell you that the effort mentioned was recognised by a local official through a letter or some kind of public recognition. Unfortunately, too often the 'success' celebrated and recognised by officials is not about children's learning at all.

We have found that many of the same motivators (e.g. peer recognition, keenness to network with peers, opportunities to develop learning and skills) apply to officials and policymakers as much as they do to teachers. We are now creating a Policy Changemaker programme to recognise this and nudge policymakers towards focusing on learning. As we build this movement we hope that the policy changemakers we work with can subsequently address the deeper structural issues that government schools face that impede their ability to improve learning.

As an example, in India many teachers spend several days each year on election duty, which takes away significantly from teaching and learning time. If we can make our policy changemakers aware of such issues, through creating an open and trusted platform for teachers to share their concerns with them, we believe they can begin to find solutions (policy emerging through practice that they own) to such structural barriers with the support of teachers in their system.

> *At STIR, we have been continually reminded just how important creating a positive enabling environment for teachers is: one teacher in our network had, after months of persuasion, managed to change the layout of his classroom to make it much more learner friendly; only to get shouted at by his district official during a school inspection.*
> *All the hard work over the past months was unravelled in minutes; there was*

literally no "permission to innovate" in the system.
On the flip side, we have also meet officials who are keen to enable teachers but lack a framework to motivate or build a culture of creatively solving problems: "I am waiting for a day when a headmaster comes to my office and asks what training he would want his teachers to attend" says a BEO in Uttar Pradesh.

Changing this culture requires work with officials and with teachers in parallel and that is what we are trying at STIR.

The moral purpose of teaching is particularly crucial in the context of government schools

With the rise of low cost private schools, public schools now (predominantly) serve the very poorest children. This, of course, is the group of children who receive minimal support for learning outside school, making increasing learning levels in public schools all the more challenging.

In his 2008 study of teacher motivation and professionalism, Mooij finds a worrying acceptance among government teachers he interviews of the 'achievement gap' between the children they teach and their more wealthy peers. Teachers, he says,

> *"do not refer to their contribution to the empowerment of a so-far excluded section of the population, nor to social goals of equity, the creation of equal opportunities, let alone, the creation of a less unfair world. This is a striking silence. Poverty and illiteracy are seen as problems, not as the core challenge of their profession."*

A particularly awful example of this kind of attitude amongst teachers is given by Lant Pritchett in his book, 'The Re-birth of Education' (2014). He describes a teacher in India who, when questioned by a parent about why his son was unable to read after several years of schooling, replied that "the son of the donkey will always be a donkey." Clearly, improving learning for the disadvantaged children who attend public schools is unlikely unless teachers believe in the cause.

At STIR, we think there is a major opportunity for teachers – and especially those in public schools – to reclaim the moral purpose and noble status of teaching. As mentioned above, the children now attending public schools in India are overwhelmingly first-generation learners from the most disadvantaged backgrounds. If teachers can show that, by working in public schools, they are leading the struggle for equality, and if this teacher-led effort can be supported by the system, there is a real chance to 'rebrand' teaching. This can be supported by government through highlighting teachers and schools that succeed in

helping high numbers of children from economically weaker sections of society to achieve. In the UK for example, the schools inspectorate released and shared widely a report called 'Excelling Against the Odds" which highlights the work of 12 schools achieving particularly strong outcomes for disadvantaged children.

At STIR, we are currently kicking off an initiative called the Chalk Walk where we are inviting our 10,000 teachers to perform 10,000 individual ceremonies in front of their children, parents and local officials, in the run up to World Teachers Day, where they reaffirm their commitment to working together to improve learning for their children. And we are inviting them to walk 10,000 collective miles and chalk a collective 450,000 word oath on their blackboards – one word for every child they teach. We hope their example will inspire their peers and shift the perception of teaching in their systems, and reclaim the moral purpose and status of the profession – and that reclaiming is led by teachers themselves.

Conclusion and Policy Recommendations

Solving the learning crisis in India's public school system is a massive task but one that must be taken on for both moral and economic reasons. Teachers have a very important role to play in leading the learning improvement process. If they are seen by policymakers as part of the solution, and if they can re-claim the moral purpose of teaching, then there is huge potential for teacher-led change. And if officials in the system support this effort through the creation of the right kind of 'enabling environment', then it is possible that a tipping point will be reached where a majority of teachers teach because they want to and all children learn. To support this effort, policymakers should consider:

- Opportunities for teachers to input into decision-making. At the school level, this could be through distributing leadership or creating structures for teachers to share practice and gain peer recognition; and at the local level, through trusting teachers to lead teacher development based on needs they identify, or through regular opportunities to share challenges and ideas openly with policymakers
- Creating some kind of fund or award, that provides groups of teachers a chance to identify a challenge and work together to overcome it, and thereafter, share learnings with local officials and groups of teachers
- Local recognition for teachers for efforts made to improve learning outcomes – this could be using poster campaigns; securing articles in newspapers; visits to other schools; invitations to conferences and forums; or through opportunities for engagement with policymakers.
- In-service teacher training that is informed by teacher need, is sustained, collaborative, and has a clear link to classroom needs

- Support for regular teacher collaboration, both in school (through classroom observations and shared lesson planning for instance) and between schools in local communities of practice or networks (which can also be used as a means to deliver external professional development).
- A focus on creating an enabling environment for teachers to lead learning improvement. This could be through regularly bringing local officials and teachers together to develop solutions for learning barriers, or providing Block Education Officers the challenge and freedom to innovate and then share learning and successful solutions with colleagues in nearby blocks.
- Highlighting teachers and schools who succeed in enabling significant numbers of children from disadvantaged backgrounds to reach high levels of achievement.

KEY POLICY INSIGHTS

- *While there are several theories for how learning levels in public schools may be increased, it is useful to think of teachers and their relationship to the system they inhabit as the starting point for reform*
- *Teachers in the public school system are currently disempowered – gathering data and information for the 'higher-ups' (rather than helping children learn) is seen as their most important task and their ability to innovate is often restricted*
- *Teacher motivation is extremely low, and requires policy mechanisms that re-re-ignite their intrinsic motivation – as opposed to imposing blunt 'carrots and sticks'*
- *In the public school system, which caters to some of the poorest children, emphasising the moral purpose of teaching is particularly crucial*
- *According to research, high quality teacher professional development should be collaborative, sustained, and focussed on student aspirations, and highlight teacher innovations*
- *Collaboration between teachers is key; it is associated with higher learning outcomes, teachers value recognition at the local level*
- *Apart from teachers, local policy officials and leaders need to be similarly developed and provided understanding and ownership over efforts to improve learning in their areas*

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CHAPTER SEVEN

The Role Of Private Sector In Providing Quality Education

Ashish Dhawan

Introduction

A high quality education system is essential for any country's socio-economic development and global competitiveness. As education has both instrumental and intrinsic benefits, governments have tried to fulfil their responsibility by direct provision of education. Yet, globally we see the private sector playing an increasingly important role in providing education, especially in countries where the government has not delivered quality education.

In India, the Right to Education Act places a constitutional obligation on the state to provide free and compulsory education to all the citizens (MHRD, 2009) and government schools have been the main providers of education. In recent years though, a dramatic change has happened with the rapid growth of private schools – defined as schools which depend on fees to fully or partially cover establishment and operational expenses and are managed separate from the government – across urban and rural India. In 2007-08, in classes 1 to 8, 72.23 percent children were enrolled in government schools and 27.61 percent in private schools; in 2013-14 these numbers were 61.32 percent and 35.82 percent respectively (NUEPA, 2007-2013). If this trend continues, private schools will soon be the dominant providers of education in the country.

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This essay examines the private sector's role in the direct provision of education. It makes the case for the private sector to play a vital role in education provision, and the government to provide support through an effective regulatory function, enabling clear autonomy and accountability norms.

Education Quality and Private Provision

Even as private schools emerge among the main providers of education, the 'quality' of education provided by them has become a deeply contentious issue. Although private schools on an absolute scale deliver poor education quality, they fare better when compared to government schools.

Large scale education surveys, like ASER, point to the abysmal learning levels in both the government and the private schools. For example, in 2014, only 42.2 percent of children in class 5 in government schools could read a class 2 text. For the private schools, this number was 62.5 percent (Pratham, 2015).

Though private schools have a significant quality differential with respect to the government schools, much of it can be directly attributed to the household characteristics and the socio-economic background of the child (Wadhwa, 2015). In addition, Muralidharan's research shows the following reasons for better education outcomes:

- Parents of children in private schools take a more active interest in their education and spend substantial portion of family income on providing better opportunities for learning outside the school.
- Private schools provide more 'teacher-contact time' than the government schools due to lower teacher absenteeism, better pupil-teacher ratios, and higher teacher effort.
- Private schools are more responsive to the aspirations and the demands of the parents (Muralidharan, 2006).

Private schools are undoubtedly more cost-efficient than government schools in producing the same level of learning outcomes[1]. Going by the current efficiency rate of spending in public sector, India would require an astronomical budget of Rs. 2, 32,000 crore (2.78 percent of GDP) to provide private school level of learning in government schools (Pritchett & Aiyar, 2014).

Trends and Types of Private Sector Contribution

Contemporary research provides valuable insights into the functioning of private schools and the larger political-economy of private education. Before discussing the potential of

[1] *This is mostly because private school teachers are paid less than their counterparts in the government system, yet are able to produce superior outcomes due to more accountability. Please see research by Karthik Muralidharan, Geeta Gandhi Kingdon and others for more detail*

private participation in education, we briefly explore the diversity in the sector.

The general misconception is that private schools are urban-centric and cater to the elite. However, affordable or low-fee schools in the country are fuelling the growth in private sector education. Even in rural areas, a growing segment of population is enrolled in the private schools. Approximately 30.7 percent of children in the age group of 6-14 years in rural India are now going to these schools.

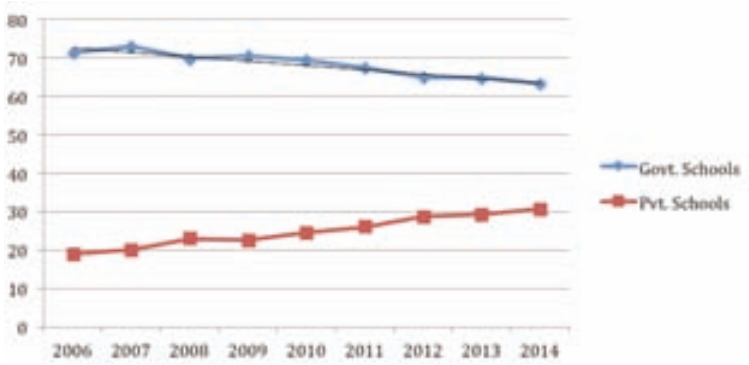

Fig 1. Enrolment trends across rural India (Source: ASER)

There is also significant geographic variation in private school enrolment. While states in North-West India have high private enrolment, states in East India have significantly less private participation.

Persentage	Description of Indicators	Total Number of States/ UTs
Above 50 percent	Goa, Kerala, Maharashtra, Manipur, Nagaland, Puducherry, Tamil Nadu	6
40-50 percent	Andhra Pradesh, Daman & Diu, Delhi, Haryana, Jammu & Kashmir, Karnataka, Meghalaya, Punjab, Rajasthan, Uttar Pradesh, Uttarakhand	11
30-40 percent	Chandigarh, Gujarat, Himachal Pradesh, Madhya Pradesh	4
20-30 percent	Andaman and Nicobar Islands, Arunachal Pradesh, Chhattisgarh, Dadra & Nagar Haveli, Maharashtra, Mizoram, Sikkim	7
10-20 percent	Assam, Jharkhand, Odisha, Tripura	4
Less than 10 percent	Bihar, Lakshadweep, West Bengal	3

Table 1: State-wise distribution of private school (Source: DISE data 2013-14)

Private input in education goes beyond the direct provision of education. According to the ASER 2014, nearly half of the children in the same age group have some sort of private input in their education, either in the form of schooling or tuition.

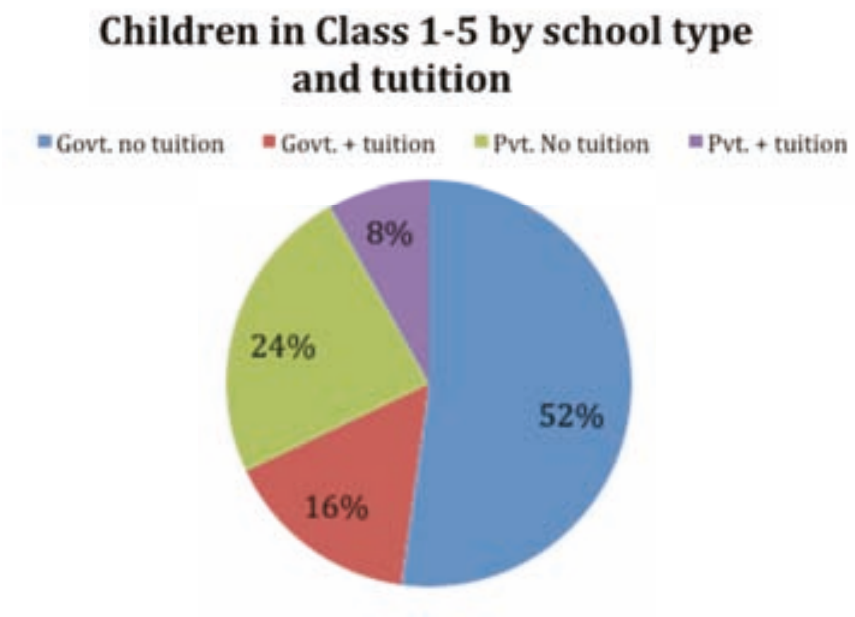

Figure 2: Different private inputs in education (Source: ASER report 2014)

It is clear from the above data that private schools are a heterogeneous set that operate in varied socio-economic environments. Creating an effective environment for them to flourish requires a clear yet complex approach to regulation.

Improving Quality in Private Education

We now address the question of how to ensure quality provision of education from the private sector. Our central thesis is that the government has to play the role of a regulator effectively by holding private schools accountable to clear standards of autonomy and accountability. It must provide a robust policy framework that introduces clear, objective, and streamlined criteria for establishing and operating private schools.

Clear infrastructure norms and simple regulatory environment

For private schools, the current operational framework is a complex mix of rules, notifications, and judgments coming from legislature, executive and judiciary. Furthermore,

at the central, state and district levels are responsible for decision-making without proper alignment of objectives. These incompatible government rules deter private operators from entering the market and create an opaque environment for their regulation, often leading to ad hoc closures and creation of rent-seeking behaviour by government officials.
Today, school recognition occurs almost entirely on the basis of input-based norms. These norms involve large up-front investment and often deter high-potential operators or entrepreneurs from entering the education sector. While there must be minimum basic standards for school inputs to ensure the safety and well-being of children, greater priority should be given to learning outcomes in the school recognition process.

There is a need to move from a system of school recognition based entirely on inputs to one that includes learning outcomes and overall well-being of a child as part of a more nuanced system of school quality measurement. Gujarat RTE rules clearly account for learning outcomes in the school recognition norms for both government and private schools. Internationally, the Knowledge and Human Development Authority (KHDA), the educational quality assurance and regulatory authority of the Govt. of Dubai, evaluates schools on multiple parameters in addition to input norms including the quality of their academic plan, mission, curriculum, human resource, etc.

Increased autonomy accompanied by increased accountability

Private schools today have limited autonomy and no accountability to quality education as measured by student learning outcomes.

School owners face rigid one-size-fits-all government mandates on staffing and curriculum, as well as judicial decisions on issues ranging from admission policy to teacher compensation. By looking at the three key factors of admissions, fees, and teachers, we can see the limits placed on private school autonomy:

- ***Admissions:*** Lack of clarity on implementation of RTE Section 12(1)(c); lottery system creates confusion and regular delays in admission processes.
- ***Fees:*** Governments have the authority to regulate fees and fee increases of private schools. This is often done in the absence of rigorous financial modelling of the impact of regulations on schools that leads to inconsistent and mutually contradictory requirements on the part of providers. For example, the Government of Uttar Pradesh requires schools to pay 6th Pay Commission salaries (including other benefits) but schools are only allowed to raise fees once in three years and by not more than 10 percent .
  Some states, such as Rajasthan, use the information system developed for RTE Section

[2] *Based on the discussion at Roundtable on Section 12(1)(c) organised by Bharat Abhyudaya Foundation and Centre for Civil Society on 12.11.2014*

12(1)(c) to centrally regulate the fee on a fixed formula basis in order to counter rampant fee increase. However, there is limited transparency in the calculation of per-child expenditure and these formulas can be arbitrary.

- ***Teachers:*** Currently, the financial structure for the vast majority of affordable private schools cannot cope up with the salary demands of qualified teachers and school leaders. Schools are required to hire teachers with a B. Ed or D. Ed degree and pay salaries consistent per the 6th Pay Commission's stipulations. Their inability to attract talent and pay these salaries forces them to operate outside the bounds of the law as currently prescribed.

Providers need increased autonomy that allows them to innovate, particularly in customisation of instruction, staffing, and other decisions affecting student outcomes. Increased school autonomy should ideally be accompanied by greater transparency and accountability in operations, with policymakers responsible for monitoring school quality.

For example, the Office for Standards in Education, Children's Services and Skills (Ofsted) in the UK is an independent body that reports directly to a Parliament Select Committee, and is responsible for the inspection and quality assurance of schools. It is independent of the education department and oversees quality measures such as standardised student assessments and school rating mechanisms. Similarly, some Indian states like Maharashtra are creating independent regulators with powers to conduct independent school assessments.

Australia's My School website (http://www.myschool.edu.au/) is another good example of transparent sharing of information leading to greater accountability. Led by Australian Curriculum, Assessments and Reporting Authority (ACARA), the website acts as a one-stop portal for information on all schools in the country. Along with access to school profiles (school sector, type and total enrolment, teaching and non-teaching staff) parents and communities have access to a school's performance on student achievement on the National Assessment Programme - Literacy and Numeracy, financial data including income and expenditure as well as data on student background. To prevent bias in comparison of schools, ACARA does not publish rankings but rather allows for the national comparison of schools based on similar student profiles and socio-educational advantages. ACARA has developed an Index of Community Socio-educational Advantage to ensure that communities can compare their respective school to high-performing schools that cater to similar student population to be able to learn best practices and improve the respective school.

KHDA in Dubai has created a transparent structure that makes school ratings publicly

available, enabling increased school accountability. These results are shared with schools to help inform improvement planning, providing parents with detailed information on school quality to help inform school choice. This information also helps parents work closely with schools, as partners in learning, and facilitates school improvement. A significant incentive for schools is the fee increase which is a function of KHDA school ratings (Thacker & Cuadra, 2014).

An added benefit of increased transparency is that parents can use such information to demand high-quality services and better school outcomes. There is a growing body of evidence that availability of information on a variety of parameters allows for a more informed choice by parents and fosters school improvement (Koning & Wiel, 2013).

Pathways of Quality Innovation and Expansion

The government can utilise its policies and resources to promote innovation around quality as well as provide opportunities for the expansion of the private system.

For example, KHDA in Dubai encourages giving high-performing schools autonomy for adapting curriculum while ensuring that national learning standards are met (Thacker & Cuadra, 2014). Similarly, ACARA in Australia leads the national collaboration to create K-12 curriculum. Yet, it also allows for alternative curriculum by defining the assessment process of well-established frameworks for meeting the requirements of Australian Curriculum. There is also a case for greater autonomy and flexibility based on models of charter schools in the US and academies in the UK that are customised to local needs. Similarly within the Indian context, a one-size-fits-all model may not work and schools should be given greater control over their staffing and curriculum provided they meet student learning standards.

Role of the private sector in improving overall education quality

India faces two opportunities that could provide examples of the private sector improving the overall education system – public private partnerships in school education (PPP) and the application of the RTE Section 12(1)(c) provision

PPP in School Education

Well designed and executed PPPs can increase access to quality education, provide greater competition and school choice, and serve as innovation centres for the government. They have a renewed policy relevance given the underutilisation of school infrastructure, especially in metropolitan areas, and the need to increase access and reduce dropouts. Though PPP in education can take different forms, the common element is the government's

PP Model	Description
School Management	Private management of government schools, but publicly owned and funded
Capacity Building	Government pays for provision of specific support (teacher training, textbooks etc.)
School Infrastructure Initiative	Private partner builds, owns and operates school infrastructure and government pays a fee for its use
Purchase of Educational Services from Private Schools	Government sponsors students to attend private schools
Voucher and Voucher-like Programmes	Government gives vouchers to parents to pay for education of their children in a school of their choice

Table 3: Common forms of PPP in school education (Source: CSF's report on Public-Private Partnerships in School Education)

Thus, governments may experiment with different PPP models to develop a judicious mix of private participation which augments current state capacity.

Right to Education Section 12(1)(c)

To address growing socio-economic segregation in schooling, Right to Education Section 12(1)(c) mandates 25 percent reservation in private unaided non-minority schools for economically and socially disadvantaged children. The government is mandated to reimburse private schools with the lower of the amount charged by the school, or the per-child expenditure incurred by the government. With approximately 1.6 crore potential seats in schools over the next 8 years, it is possibly the world's largest programme for public funding and private provision in education.

This section of RTE provides an excellent opportunity for the government to look at our education system, both public and private, more holistically. As publicly-funded children will study in the private schools, the government could demand the same level of accountability as it envisages in its own system. This could include private schools having to participate in state learning achievement surveys and greater accountability in school finances and operations

Through policy design, governments could make the system more equitable (for example, by targeted definition of the beneficiaries), promote informed school choice (by providing more information about the schools to the parents before applying), link reimbursement to the learning outcomes (which states, like Andhra Pradesh, have already mentioned) and track the children in the school system for academic and social inclusion.

Conclusion

In his introduction to Department for International Development (DFID) funded research on private schools, the British educationist Sir Michael Barber, wrote:
"The future lies not in purely public solutions nor in purely private ones. The road to hell is paved with false dichotomies. Instead, the ideal lies in judicious combination of both- with government as funder and regulator but not as monopoly provider."

These 'false dichotomies' take the attention away from the relative strengths of the public and the private sector and the complementary relationship they can develop. For example, some countries adopted policies that foster competition, incentives and information for accountability in the public sector after their successful implementation in the private sector. Also, in many cases quality of the government school system is a reference point for the private sector too; private sector needs to provide a premium over public education to justify its existence to the ever demanding parents.

Fortunately, there is a growing realisation in the education sector of the critical role of the private schools. Therefore, it is critical to think of the education system as a whole and work towards establishing benchmarks of excellence. The only distinction in the expansion and enabling environment for schools should be their quality and commitment in providing opportunities for all children to succeed. Autonomy and accountability are the twin pillars of such a possible refinement. The nature and the extent of autonomy and accountability would then be a joint understanding of schools as the providers, parents as the clients, and the government as an effective regulator.

KEY POLICY INSIGHTS

There has been a rapid increase in the private provision of education in recent years. While private schools on an absolute scale deliver poor quality education, they fare better when compared to government schools. Private schools, however, should not be seen as a homogenous set, as they operate in varied geographic and socio-economic environments.

Currently, private schools contend with a complex framework of rules, notifications, and judgments coming from legislature, executive and judiciary, and multiple stakeholders with unaligned objectives. Given this uncertain policy environment, India urgently requires a new national policy on private schooling. The key pillars of such a policy should include the following:

- *A focus on learning outcomes and overall well-being of a child – instead of just inputs and infrastructure norms – for school establishment and recognition*
- *Greater autonomy to providers to allow them to innovate, particularly in the customisation of instruction, staffing, and other decisions affecting student outcomes*
- *Balance autonomy with increased transparency and accountability to student learning and well-being*
- *Mechanisms to make information about performance of schools publically available for continuous monitoring by all stakeholders in the education sector*
- *Incentivise quality operators to expand through innovative public-private partnerships that employ a judicious mix of government and private participation*
- *Redesign the implementation of the RTE Section 12 (1)(c) to make the system more equitable, promote informed school choice, link reimbursement to the learning outcomes, and track the children in the school system for academic and social inclusion*

Eventually, this calls for the government to provide support through an effective regulatory function, enabling clear autonomy and accountability norms, for the entire school system

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CHAPTER EIGHT

The Role of Supplementary Education

Unmesh Brahme

Introduction

The supplementary education sector is a hugely varied and diverse one, covering attempts to educate children outside of formal and normative systems, right from the early childhood education levels to primary, secondary and higher education levels. It has come to assume many interpretations and meanings, more so given the current debate on quality learning outcomes in schools around the world. Supplementary Education may be defined as the formal and informal learning and developmental enrichment opportunities provided for students outside of school and beyond the regular school day or year. After-school care, perhaps the most widespread form of supplementary education, includes the special efforts that parents exert in support of the intellective and personal development of their children (Gordon, 1999).

The types of supplementary education include those that are implicit (parenting, nutrition, family talk, parental employment, decision making, reading along with the children, socialization and acculturation, social networks, travel and environmental supports (Mercer 1973 and Wolf 1966) and those that are explicit (academic development, tutorials, advocacy, remediation, one-on-one tutoring, specialized services, socio-cultural and child-centred social groups). These interventions can be directed at students who are performing academically at different levels and achievement ranges

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to those who are at risk of underachievement and to those who are high achievers.
This essay focuses on assessing the relevance of supplementary education in the Indian education system, mostly at primary and secondary grade levels. It argues for defining supplementary education and its myriad interventions in a more holistic manner rather than a 'fix it' approach that kicks in only when formal education fails or shows signs of failure.

Current Status and State of Supplementary Education

In developing countries around the world – as also in most of South Asia, including India - most of the action around supplementary education has been in the area of helping children who have not been able to benefit from formal education approaches. This typically includes out of school children (OOSC) and those inside schools, who while physically present don't learn well enough to make education count in their lives. Significantly enough, in these countries, there is a large focus on gender and girl's education since this segment of the population still continues to receive relatively less support in terms of educational improvements. Children thus fall into one of these categories: those not participating in formal schooling in three age groups: pre-primary, primary and lower secondary school age; and those who are attending primary or lower secondary school, respectively but are at risk of dropping out (UNESCO, UNICEF, 2014).

There are several factors that result in children staying out of school or dropping out – low economic status, geography, socio-economic and community status, disabilities, areas disrupted by emergency-situations, and so on. In addition, children enrolling at an older age than the grade-appropriate age, along with repetition and dropout, is also leading to a major age-grade discrepancy in school attendance around South Asia. In India, the problem of enrolment at a younger age than the grade-appropriate age may also be attributed to the drive to ensure compulsory schooling where parents demand and school authorities relent by admitting all children that apply for admissions. Here, the margins between early childhood education and entry grade primary education, tend to diffuse since age-appropriate admission process is not in place and children freely move between the two age-group thresholds.

In the Indian context, in real terms, supplementary education has taken all forms and shapes, implemented by both government and civil society organizations with the explicit intention of addressing access and learning deficiencies of at risk children, both in and out of school. The predominant driving force for these interventions has of course been filling the gap in achievements generated by mainstream education.

A number of initiatives have been designed for supporting children who are lagging behind through programmes initiated by the Sarva Shiksha Abihyaan (SSA). For example, Learning Enhancement programme, Remedial teaching, Special Teaching, which not only caters to the needs of mainstreamed children but is also directed at of school children. The Indian government has also initiated policies for mainstreaming and empowering educationally poor children. Section 4 of the Right to Education (RTE) Act provides that when a child above six years of age has not been admitted to any school and if admitted, could not complete elementary education, then she shall be admitted to an age-appropriate class. And to ensure that she is at par with others, she shall have a right to be provided special training.

Strategies used for alternative or non-formal education in the past have been aligned to conform to the RTE provisions of Special Training (ST) for out of school children (OOSC) who must be academically assisted for admission to an age-appropriate class in a regular school. Some noteworthy attempts by governments in India, both at central and state level, are expressed through a number of relevant schemes and initiatives: Education Guarantee Scheme and Alternative and Innovative Education Scheme; National Programme for Education of Girls at Elementary Level (NPEGEL); Kasturba Gandhi Balika Vidyalaya (KGBV) that are residential girls schools; the National Policy of Education (NPE), which lays stress on Early Childhood Care and Education (ECCE); Non Residential Bridge Courses (NRBCs); Residential Bridge Courses (RBCs) or Residential Camps, to name a few. These interventions are eminently geared to address the education of migrating children, urban deprived children, girls, children belonging to scheduled castes and tribes, children with special needs and children in risk situations such as for instance, child labour, street children and children suffering from effects of strife and/or abuse.

Mostly garnered to manage problems relating to children at risk in various situations and essentially those out of school, the predominant goal of supplementary education has been to ensure children are able to participate in mainstream education, and by corollary the mainstream economy. Speaking from the perspective of definition though, most supplementary education seems to have eluded the community, family, and learnings from a realistic connect with life within the societies in which children live and grow. The focus on the extra-curricular – or those elements of training and skills that are crucial ingredients for a child's overall and holistic development, seem to have been ignored. Within mainstream education too, since supply-side improvements have not kept pace with the required best in-class enhancements, the chances of more and more children being branded into supplementary education are high.

The state of supplementary education itself, as any observer of the India education system will note, is not in the best of health across any age-group of children. The right intent is

seen in the policies that have been outlined above, but its implementation lacks vision and the ground reality does not give confidence that things are on the right track. One look at the ECE centres, the state of Indian primary classrooms, or the social pressures that girls in the country still face to receive education, point to the sad state of affairs.

So the conundrum is really deep and can be expressed as: if mainstream education is failing India's children and supplementary education is merely a good intervention not yet practised, where does that leave learning outcomes, academic achievement, and gaining an enriching and practical understanding of life, for children at large? It almost seems as though children are caught between the two forms of education, without successfully transitioning from one to the other and beyond. It is important thus to correct certain fundamental flaws in the schooling system and allow more supplemental activities to flow into the mainstream, thus redefining and rendering the domain of supplementary education as a real complement to formal education than a repair mechanism that does not work.

The Future of Supplementary Education

Supplementary education has a huge potential to better address supply-side barriers by focusing on the benefits of deploying a least common denominator policy that looks at key interventions without which the system as a whole will not function. My own experience driving early-grade reading and secondary-grade girls' education through the government education system indicates that focusing on the basic building blocks of learning and comprehension help in a large way to accentuate the positive value of supplementary education. As the preceding paragraphs indicate, all children who need to be in school but are out of it for various reasons, are within special and excruciating circumstances, towards which formal systems of education have not had sufficient bandwidth to target and generate impact. Education reforms at the classroom and learning level thus need to be the moot feature of any supplemental education intervention.

India has demonstrated remarkable progress in ensuring that almost all children are enrolled in schools. However there is a lot of variation in daily attendance across states. While efforts are afoot to improve school facilities, the progress is slow. Across primary schools in the country, apart from a decline in reading levels between 2010 and 2012, reading levels over time are "low" and "stuck". Reading levels in Std V in private schools are also not high. The gap in reading levels between children enrolled in government schools and private schools seems to be growing over time. Further, percentage of children who can read at Std II level (or higher) is about 48 percent. The rest of the children are at different levels: close to 20 percent children can only read letters or not even that; 14 percent can

read words but not sentences; 19 percent can read sentences but not longer text. Each of these groups need special and specific attention (ASER, 2104).

Teaching from the grade-level text book is not helpful for these children unless they can read and understand. There is a need to start from the child's level and use appropriate methods to help them progress. Grouping by level and not by grade can make teaching efficient and effective for acquiring these basic skills quickly so that further progress can be made on the foundations that are built. Early years are very important, as this is when basic skills should be acquired. Without strong foundations in early years, children cannot progress (ASER, 2014).

In terms of numeracy, a growing proportion of Std II children do not know numbers 1 to 9. This means that they are not learning them in Std I. Increasing numbers of children in Std III do not recognize numbers till 100. This means that they did not pick them up in Std II. Strong focus is needed in Std I & II to ensure that basic skills are built in these early years. Half of all children in Std V have not yet learned basic skills that they should have learned by Std II. Close to half of all children will finish eight years of schooling but still not have learned basic skills in arithmetic. Thus, in Std I & II, a strong focus is needed to ensure that basic skills are built in these early years. There are 55 million children in this age group, and they need to be encouraged to speak, to discuss, to express their opinions and to solve problems together (ASER, 2014).

By the end of Std II, children should be able to at least read simple sentences, write their own thoughts and be comfortable with numbers & operations at least up to 100. For Std III, IV & V, DISE 2013-14 indicates that there are about 80 million children in this age group. Immediate attention is needed to help many of these children in these grades quickly acquire basic skills. Without basic skills, they cannot progress in school. Schools need to make time for helping children catch up; clear, focussed and achievable learning goals needed; and entire system needs to be geared to make this happen.

Recognising that the fundamental building blocks of education lie in early grade interventions, the newly launched Padhe Bharat Badhe Bharat (PBBB) scheme, makes a significant effort in terms of designing a framework that holistically looks at early-grade development of children in primary grades, focusing as it does on early reading, writing with comprehension, and early mathematics learning. PBBB also addresses fear of Mathematics, and observes that its teaching in the present form has too many abstractions rather than encouragement towards mathematical thinking. Mechanical rules are the norm rather than proper understanding during the early years in classes 1 and 2.

Need to Focus on Fundamentals

As stated earlier in this essay, supplementary education needs to reinvent itself with a focus on fundamentals - reading and life skills provide opportunities to deploy this paradigm shift. The Indian education system has gradually evolved from "learning by rote" to "learning to know" to "learning for fun", but the solution to enhance learning and academic achievements still eludes the country as a whole as the data repeatedly demonstrates.. There are many overlapping schemes and models both by government and civil society organizations but their convergence lacks vision and direction.

To state the case poignantly, while having a library in most schools in the developed world and in urban India may be a foregone conclusion, their abysmal absence across government schools across India is very telling. Children clearly can't learn various subjects taught at school if they don't have the necessary reading abilities. Hence any supplementary education effort needs to consider the foundational denominator for early intervention. One such intervention is establishing libraries in schools to encourage the habit of reading through the provision of quality and grade- and age-appropriate books, and creating capacities among teachers so that they are able to teach better and ingrain the necessary reading skills in children. The introduction of local language books and literature will allow children to learn in their mother tongue and thus develop better comprehension capacities to be able to then understand subjects and books in higher grades. Linguistic variations that prevail across schools in the country owing to a high diversity in home language, will continue to be a concern though, and certain at-risk groups will still find it difficult to come to terms with reading proficiency. Bridging this gap thus becomes important.

With reading abilities declining in schools across the country, there is an urgent need to institutionalise these supplementary interventions by civil society organizations into the mainstream fabric of the schools.

Reading, of course, is just one area of intervention., There are other such models in numeracy, gender sensitive education, innovative pedagogy, and instructional techniques to deliver learning in the classroom and educating girls against a backdrop of social and community pressures.

Focus on girls

My experience working in girl's education brings out some key points on how best to integrate the supplementary aspects of the domain into the formal mainstream government schooling strategy, to ensure more girls attend school, learn, and don't drop out. It would be fair to say that in comparison to boys, girls require more support in school owing to their

uniquely marginalised positions in society and communities – a phenomenon that is not only noticeable in rural communities but also in relatively well-endowed urban ones..

At the level of primary schools, girls need better guidance to allow for their emotional traumas (as a result of marginalised position in society) to be managed alongside attention to their academic needs. As girls progress to secondary grades, more attention needs to be paid to the changes they see in themselves as a result of growing up as well as the increase in their responsibilities within families and communities. A combination of life–skills-based training that teaches self-awareness, empowerment, courage and assertion coupled with academic tutoring, mentoring and counselling has proved effective in ensuring girls are able to stay in school, transition to higher grades and aspire to receive higher education with a view to ensuring access to a more holistic life and livelihood opportunities. The Beti Bachao Beti Padhao scheme does try to echo this combinational sentiment of ensuring an integrated platform in schools for the success of girls in the education domain, and time will only tell how best the implementation will unfold. Though, as in the case of reading, the greatest challenge remains in forward integration into the government system and consistent institutionalisation.

Can Tutoring Help?

Tutoring or shadow education has often been portrayed as the holy grail of supplementary education, and the be-all-end-all solution to resolve many of the educational woes. It is important to note that shadow education can seriously undermine the efforts to expand equitable access and strengthen inclusiveness in education systems. It can also undermine efforts to improve the quality, relevance, and cost-efficiency of education (Bray and Lykins, 2012).

The Pratichi Trust – established by Amartya Sen – prepared a survey of primary education in West Bengal in 2001-02, and repeated the survey seven years later. The initial report showed many shortcomings in the education system. The later report showed significant progress in many domains, but also documented growing dependence on private tutoring. The study sampled both primary schools and Sishu Siksha Kendras (SSKs), which are rural and community-based alternatives to primary schools. Sen wrote (2009):

> *"There has been a real regression, as opposed to progress, on the dependence on private tuition. The proportion of children relying on private tuition has gone up quite a bit (64 percent from 57 percent for the students of standard primary schools, and 58 percent from 24 percent for SSK children). Underlying this rise is not only some increase in incomes and the affordability of having private tuition, but also an intensification of the general conviction among the parents that private tuition is "unavoidable" if it can be at all*

> *afforded (78 percent of the parents now believe it is indeed "unavoidable" – up from 62 percent). For those who do not have arrangements for private tuition, 54 percent indicate that they do not go for it mainly—or only—because they cannot afford the costs. (Bray and Lykins, 2012)*

Sen noted that most of the content in the private tutorial classes could and should have been taught in the regular classes of the primary schools. He added that private tutoring has the following effects it divides the student population into haves and have-nots; makes teachers less responsible and diminishes their central role in education; makes improvements in schooling arrangements more difficult, since the more influential and better placed families have less at stake in the quality of what is done in the schools (thanks to the supplementation outside school hours); [and] effectively negates the basic right of all children to receive elementary education. (Ibid.)

Thus, while there is much to learn from the domain of tutoring and adapt and apply in mainstream government schools, merely aping the private system of education will not add any value.

Policy Recommendations

We commenced this essay with a focus on out of school children and gradually progressed the analysis to look at specific interventions, in the process focusing on reading literacy and girl's life skills education and finally commenting on the role of tutoring.

Supplementary educatin is a vast topic and runs the danger of being an all-inclusive domain that is deemed to be responsible for finding solutions to all that is wrong with the mainstream education system across all levels and grades. Reading and life skills are presented as two examples, but there are many other potential interventions that need inclusion across the education platform. The learnings from few key interventions presented in this essay are intended to inform the route map for additional initiatives and innovations. In the ultimate analysis, if mainstream education becomes more quality conscious, supplementary education needs to look only at focused interventions, for example, those required in the case of at-risk children.

Overall, considering that the segment of supplementary education itself needs a reworking and paradigm shift, bold policy mechanisms are important to ensure effective outcomes:

- Governments at central and state levels need to redefine the notion and concept of supplementary education to include life skills and complementary extracurricular skills as significant elements rather than look upon the domain as a repair mechanism

for the mainstream. The tutoring analysis in this essay clearly shows the danger of mainstream failing at the expense of the supplementary sector. Such a situation will lead to spiralling negative consequences for the majority of government-run education in the country.

- The creation of effective pathways to adapt, contextualise, and deploy on a mass-scale least common denominator models that build the foundational capacities in education – for example reading, numeracy and life skills – needs attention. These would go a long way in ensuring schools provide meaningful education to their children.
- Various children in at-risk groups and communities are still not completely integrated into the government schooling system. This calls for better approach to annual planning and budgeting that looks at demonstrating visible infrastructural and learning achievements that will create both a leverage and a focus point to rally around for schools to educate all children in an inclusive manner.
- The question of inter-ministerial and inter-departmental coordination has always been a stumbling block to address in the Indian education system. From early childhood education to primary education to lower secondary to higher secondary to higher education and beyond, multiple ministries and departments are involved in seeking to tilt the balance in favour of a positive change. However the collaboration has been far less effective when it comes to seeing visible changes on the ground. The ability to combine both people and financial resources indeed has received a fillip with the new corporate social responsibility mandate (from the Ministry of Corporate Affairs) that encourages businesses to contribute to social development, both financially and in terms of value-added strategies. The supplementary education domain is a prime platform where such combinational collaborations can be practised with a view to increasing the power and effectiveness of mainstream schooling

KEY POLICY INSIGHTS

- *Supplementary Education needs to be defined more broadly to include activities that catalyse the overall development of children, and to this extent working with communities and parents is key*
- *A number of initiatives have been designed for supporting children who are lagging behind through programmes initiated by the Sarva Shiksha Abihyaan, but their implementation faces significant challengesVVV*
- *Within schools, supplementary education needs to focus on fundamental*

building blocks, such as developing reading and numeracy abilities, without which any other efforts will not show results since they will be building on a weak base or foundation.

- *Out of school children and at-risk children need special attention and the current schooling system does not make education attractive or meaningful to them despite a plethora of schemes that exist to support such children. This requires massive technical intervention where the specialist expertise to work with such children is integrated within the school system.*
- *Supplementary education must be targeted at girls, to address gender gaps in education – a combination of life-skills-based training that teaches self-awareness, empowerment, courage and assertion coupled with academic tutoring, mentoring and counselling has proved effective in ensuring girls are able to stay in school, and transition to higher grades*
- *There is much to learn from the domain of tutoring to inform the mainstream government school system, but merely aping the private tuitions system will not add any value, as it has several negative externalities, including the widening of inequalities*

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VIEW FROM THE LAST-MILE

Reflecting Grassroots Experience in Policy

Devanik Saha

There has been an augmented interest in the Indian education sector in the past few years. With the advent of many new organizations, the sector has attracted immense talent, massive funding and an increased government focus in the past few years. Though older players like the Nandi Foundation, Pratham, and Katha, have been in the space for much longer, it is only since the past five years that India's interest in education has witnessed a dramatic rise.

However, despite this surging interest, I have observed a worrying trend: most panel discussions, policy roundtables, op-eds in newspapers, and private committees on education comprise people who have minimal understanding of grassroots issues and lack ground-level perspectives.

It is imperative that professionals with extensive grassroots experience, and especially those that have worked in classrooms and schools, are involved in framing policies and guidelines. I have had the chance to work with numerous NGOs in different capacities – as a Fellow with Teach For India, where I taught in a municipal school for two years; a Fellow Innovator with STIR Education which involved work with teachers from government and private schools to scale classroom innovations; Naandi Foundation, where I worked with Urdu-medium schools to support teachers to perform better. I even set up my own after-school learning center "Unnayan Learning Hub" to provide remedial education to municipal school students. During each

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of my experiences, I had the opportunity to interact and work with various stakeholders – private as well as government – which strengthened my belief that we need more people with grassroots experience in policy-level positions.

"There is no professional development for teachers"

A significant portion of my experience in education has involved working with the public education system which is plagued by several issues. One of the chief problems is that a teacher's job is quite monotonous. There is no professional development for teachers. Unlike other jobs, where there are temptations of promotions, getting regular pay hikes, and exposure to exciting things, no such provision exists for teachers, thus making it an extremely draining job. Many young teachers are passionate in their early years but their enthusiasm wanes out soon.

Another issue which teachers frequently complain about is the burden of administrative work. Teachers are made to fill numerous registers, forms and reports everyday which hampers their daily schedule and prevents them from teaching continuously for a long period. This issue has been raised at some forums and roundtables, but not much headway has been achieved. My own suggestion would be to appoint one clerical officer per school to manage the administrative work (barring matters related to the teacher's classroom). Such a move would definitely reduce the burden and enable teachers to give more time to their classrooms.

Quality of education in private tuition centers is "extremely dismal"

The remedial education segment has seen tremendous growth with the emergence of many for-profit as well as non-profit organizations. But there has never been any strong focus on remedial education by the government and its policies. During my stint with the Teach for India fellowship, I realized that the parents of my students weren't literate enough to help them in their day-to-day academics. Although I put in my best efforts to help them learn and even assisted with regular extra classes, classroom assistance must be supplemented by support at home.

Since the parents of kids in government schools are not very educated, they send their kids to private tuition centers, where the quality of education is extremely dismal. These tuition centers are run by young college students who live in the same community and want to make quick bucks to finance their college education, and therefore, do not put much effort into their teaching. Based on feedback from students and my own research, I realized that there is a pressing need to have quality tuition or after-school centers and therefore, post completion of my two year fellowship, I established Unnayan Learning Hub, an after-

school centre where I provided remedial education to my students, and basic literacy and math skills to new students.

However, I faced many challenges (apart from funding) in running the center. The main issue was that the parents' idea of a tuition centre was quite different from what I had envisioned it to be. They wanted it to be merely focused towards preparing them for exams and helping them finish their daily homework, contrary to the outcome-focused learning that I wanted to provide. The difference in their expectations and the learning my centre sought to provide hampered my efforts a lot, but I always attempted to maintain a balance between the two.

I taught at the centre for a year, but decided to close it post the yearly school exams, as it was no longer feasible, owing to funding as well as other logistical constraints.

"Quality remedial education is critical to overall academic growth"

Given the background of students in government schools, quality remedial or after-school education is critical to their overall academic growth. For academically strong students, it provides them with multiple opportunities to improve their critical analysis and thinking skills, while for slow learners, it is imperative that they get additional support to strengthen their basics. Therefore, the government should definitely try to make some headway in providing remedial education to its students. If not nationally, a pilot should be attempted where the government can leverage already existing organizations in this segment to support students after their school hours.

CHAPTER NINE

Quality Education for Quality Lives for Girls in India

Urvashi Sahni

Introduction

The last decade has seen girls' education become a focus of the development discourse. There emerged an international consensus that schooling for girls is imperative and central to national development. Girls' education has been identified as the most effective means of combating many of the most profound challenges to human development, promising many social and economic benefits leading to a better future for the universe. It has variously been referred to as a "magic bullet", the best investment that any country can make toward development and more. It is expected to lead to increased income for both individuals and nations; more productive farming; smaller, healthier, and better-educated families; reduced infant and maternal mortality; a reduction of HIV/AIDS; and gender equality (See Menses, 2012, Summers, 1994, Herz and Sperling, 2004).

Over the past 10 years, many countries have made strides in providing access to education for all children, and girls in particular. These achievements are very welcome and should be celebrated, but this is not the whole story. The Education First initiative of the UN Secretary-General reports that 61 million children are still out of primary school worldwide and that "the quality of education remains desperately low in many parts of the world." The problem is worse in secondary school, where 72 million children are not enrolled in lower secondary schools, and of these, 39 million girls aged 11 to 15 years are

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out of school (UNESCO 2011).
While it is clear that the goal of universal access still needs work, it has been pointed out by Plan International (2012) that enrolment by itself is "an inherently flawed measure of access" and not a good measure of whether girls are actually going to school or learning anything there. The quality of education received by the millions enrolled in school is poor; 150 million children are at risk of dropping out and 100 million of these are girls.

It is girls from the poorest communities, those marginalized by ethnicity, caste or language, those in rural areas that are out of school. India's own experience is similar: there has been a sharp reduction out-of-school children from 15.1 million in 2002 to 5.6 million in 2011 (UNESCO 2011). Yet 59 percent of the out-of-school children are girls, the highest percentage for any region. Despite the impressive increase in enrolment in primary and secondary schools, the dropout rate is alarming. In India, 55 percent of girls drop out in elementary school and 73 percent drop out before they reach class 10 as reported by the 7thAll India School Education Survey, 2007. Of these most are poor, rural and lower caste (Bordia Committee, 2010). So more girls are in school, but they are not completing school, especially not the poorest girls from the poorest regions. And the ones who are in school are not learning much. The discourse on education, recognizing that there is a crisis in learning, is moving away from mere enrolment and towards "quality education". The definition of 'quality,' however, is often limited only to better outcomes in reading, writing, and other traditional subjects. This is problematic, as it offers a limited way of looking at education and learning outcomes both.

International evidence shows that the positive social, economic and health benefits attributed to girls education are correlated with learning levels and most of them require completion of secondary school education[1]. It is important, therefore, that girls not only enrol but also that they stay and complete school, and most importantly, learn and leave school as empowered young women in control of their lives.

Girls Drop Out Because They Are Girls

Evidence from international and India-based research points to several reasons for girls dropping out of school. Taken together, these represent a combination of societal and social factors. More significantly, they reveal that girls do not 'drop out.' Instead, they are 'pulled out' or 'kept out' by families, or 'pushed out' by schools.

Societal 'pull out' or 'keep out' factors: Girls from poor families are most at risk of dropping out and it is not hard to see why. Poor families find the direct and indirect costs of educating their daughters too high, especially considering the low value they attach to their daughters

[1] *Center for Universal Education 2011, Schultz 2002, Dollar and Gatti 1999, Plan International 2012*

and to educating them. So when family resources are scarce and the direct or indirect costs of education become unaffordable, it is the girls who get pulled out.[2]
In many countries secondary education is not free, which is another reason why girls do not make the transition to post-primary education (Plan International 2012).

Even when elementary education is free, as it is in India, the indirect costs and the opportunity cost of educating girls is a strong deterrent. The subsistence of poor families is heavily dependent on the household and productive labor of girls.[3] The burden of household chores and sibling care falls largely upon young girls, which leaves them less time to study at home, resulting in poor performance and eventual drop out (Chugh 2011). Girls in poor families receive less than their fair share of the already scarce food at home, their share often being given to the higher-valued sons. This leads to malnourishment and poor health, which is the cause of frequent absenteeism and falling behind in studies.

Child marriage and teen pregnancy rates are high among the poorer populations in poor countries. Out of the 10 million child brides around the world, a third are from India (World Bank 2012). The National Family Health Survey (2006) shows that 71.6 percent of Indian women currently aged 20 to 24 years, who had been married before the age of 18, did not have any education at all. For most girls, marriage means the end of education and the beginning of childbearing (UNESCO 2010).

Parents' aspirations for girls are often limited by a view of them as potential wives and mothers (Mukhopadhyay et al. 2012). The incidence of domestic violence too is high in low-income families, and is often directed at the girls. Apart from decimating their self-esteem, this has an adverse effect on their attendance and performance in school

Girls are primarily identified with and prepared for their roles as domestic, sexual, and reproductive servers, and boys for their roles as providers and household heads. As such, education plays a small role in the life plans that parents and the community have for girls. This perception of girls is one of the key barriers to girls accessing their right to education (Plan International 2012).

School 'push out' Factors: Though distinctive, school-related factors are often linked to family-related ones. Already reluctant, parents are less inclined to send their daughters to school if they believe their daughters are going to be unsafe or likely to be abused physically or sexually in or en route to school, are not learning anything, or are disinterested in their studies because of poor quality, indifferent teaching, and irrelevant curricula.[4]

The Prime Minister has himself repeated many times that one of the reasons girls drop out

[2] *Plan International 2012, Dreze and Kingdon 1999, Glick 2008*
[3] *Das 2010, Chugh 2011, Rani 2011, Hunt 2008*
[4] *Das 2010, Reddy and Sinha 2010, NFHS survey 2007*

is a lack of toilets in schools. Over 0.5 million (40 percent) schools do not have a separate toilet for girls. In three states (Arunachal Pradesh, Nagaland, Meghalaya) less than 50 percent of the toilets are functional). One in ten rural schools are without toilet facilities, and where it exists, only one in two is usable.

The team handling the model schools project in Rajasthan reports that they are finding it difficult to fill the quota of 55 percent girls because parents are reluctant to send their daughters long distances, fearing for their safety. The Kasturba Gandhi Balika Vidyalayas in Uttar Pradesh too have reported a similar reluctance among parents, and my own work in rural regions corroborates this.

Apart from safety, teachers' low expectations from girls and the lack of support for first generation learners further demotivates both students and parents. Schools are largely insensitive and unresponsive to gender and end up perpetuating the status quo, by the way in which girls are treated. Teachers, much like their families, perceive girls as potential mothers and wives and see little value in an education for them. Teachers and schools do not fight hard enough to keep their girls in schools and ensure that they achieve and complete. They give in too easily to the societal and parental pressures mentioned above.

An insensitive and inflexible evaluation system that seems to be completely oblivious to the various gender constraints faced by girls from poor families poses a huge hurdle in their transition from primary to upper primary and higher secondary levels. It has been found that girls from poor families, due to the challenges they face at home, have difficulty keeping up with their studies. They have difficulty passing the gatekeeping exams at each level, which leads to their repeated failure and eventual dropping out[5]. Schools do not have remedial programs, or ways of helping girls, who have dropped out of school due to responsibilities of sibling care and household chores, catch up.

So even if more girls are in school, most of them are not completing school or learning much. This significantly decimates the gains made by the successes in the enrolment of girls.

Education and Empowerment: Making the Correlation

Education and empowerment are equated by the international development discourse as though they are necessarily related, leading to greater agency for women and an improvement in their well-being, and subsequently that of their children and society (Herz and Sperling 2004). The National Policy on Education of 1986 first brought the

[5] *Das 2010, Lewin 2007, Plan International 2012*

issue of gender and girls' education centre stage. It linked education of women and girls to their empowerment, stating that "education should be a transformative force, build women's self-confidence, improve their position in society and challenge inequalities" (Bordia Committee 2010).

While there are several definitions of empowerment, they all emphasise agency, choice, and self-perception as an equal and autonomous person. Scholars have questioned the causality between education parity and women's empowerment[6], citing insufficient empirical – and particularly qualitative – evidence to demonstrate that gender parity in education leads to the empowerment of girls.

Plan International (2012) cites the case of both Latin America and the Middle East, where "increased levels in female education has not led to corresponding equality in the work place or at home. Girls and young women still emerge struggling with the idea that they are second-class citizens." It concludes from this that if girls "are to play an equal part in society, once they finish their education, that education must be truly empowering and equip them with the capacity and determination to challenge the discrimination they will inevitably face."

The international discourse on education and women's empowerment has only recently recognized that unless there is a focus on the *process* by which education can transform inequitable social norms and structures, mere access to education does not necessarily lead to empowerment or gender equality. While achieving gender parity addresses girls' right to education, more needs to be done to address their rights *within* and *through* education in order for girls' education to lead to gender equality. Not only must girls have access to education, they must have access to a high quality education – i.e., one that teaches them that they are equal, autonomous persons, while simultaneously addressing learning gaps that cause them to fall behind.

Government's Efforts at Girls Education

In 2001, the Indian Government launched a special component of its Sarva Shiksha Abhiyan, the 'National Programme for Education of Girls at Elementary Level (NPEGEL),' which took a very comprehensive view of girls' education. Its goal was to provide for blocks, focused projects for girls at risk with clearly defined outcomes. Its focus was:

> *"to develop innovative gender sensitisation and gender training programmes, to gear entire education system to play a positive interventionist role to enhance self-esteem and self-confidence of women and girls; build a positive image of women by recognizing their contribution to the society, polity and the economy, to break gender stereotypes,*

[6] *Malhotra and Maher 1997, Murphy-Graham 2008, Bajaj 2011, Stromquist and Fischman 2009*

> *ensuring that the content and process of education is sensitive to gender concerns, to build community support for girls' education." The programme aimed at the "empowerment of girls through exposure to 'other than textbooks' activities to enhance their information base, their self-esteem and self-confidence, skills and capacities to equip them for coping with different situations in life, enable them to make informed choices, participate in decision making processes, access resources that will assure them quality of life."*

This statement sounds almost lyrical in its content and intent, and if it were implemented in full, there would be no need to say more.

The ***Kasturba Gandhi Balika Vidyalaya*** scheme of residential upper primary schools for girls was launched in 2004 to reach out to girls from extremely marginalized social groups. The goal was to provide access to girls living in remote areas and to free them up from domestic labour so that they may wholeheartedly devote themselves to their education. There are now over 3500 KGBVs and 1000 model schools in the country.

Of course, the implementation of these schemes is problematic and falls significantly short of their intentions. Like all government programs in education, these programs suffer because of a lack of serious political will, insufficiently thought-out management structures, inadequate infrastructure, poor training, monitoring and evaluation, and support. For instance, the KGBVs are not only understaffed, their teachers are on contract, poorly paid as compared to regular government school teachers, often untrained in pedagogy and gender, both. The schools' physical infrastructure is also lacking – in some cases the girls have to bathe out in the open.

So, while the scheme is good, its implementation displays a lack of seriousness of intent, and the results are far below expectations (KGBV Evaluation 2013). Consequently, these interventions notwithstanding, the problem of girls' education remains deeply problematic (Jandhyala 2003).

Lessons from Successful Interventions: Girls need not drop out because they are girls

My experience running ***Prerna*** in Lucknow, India, has allowed me to successfully incorporate gender study alongside other more traditional curricular subjects like math and science with very positive life and learning outcomes, in a formal K-12 school. Prerna shows how a curricular focus on empowerment and gender, a redefinition of learning in terms of life outcomes, and the use of a critical pedagogy with a focus on girls rights, can

provide an education for girls which fulfils both goals—providing an education that helps girls realize their right to a fully human functioning, as well as the larger societal goal of gender equality. Prerna has an 85 percent completion rate, student achievement scores outperform national averages significantly and there is a 95 percent transition rate to higher education.

The school takes a holistic approach to girls' education emphasising life outcomes and not merely learning outcomes. It is highly subsidized, charging very low fees. In addition, is run in the afternoons, so that some of the girls who are working can still attend, and provides a very safe and caring environment, with all female teachers. Along with gender training, the teachers are trained to be sensitive to the girls as poor, first generation learners. Girls are taken at any age and put in a remedial bridge program, and a multi-level accelerated learning approach is taken so that they are mainstreamed into appropriate classes when they catch up. Extra academic support is provided in school. An evaluation system is adopted which is flexible in its choice of subjects and in its method.

Students' attendance is monitored closely and strong ties are maintained with the community. Teachers intervene actively if girls remain absent for too long, counselling parents and aggressively trying to prevent child marriage, enlisting police and NGO support when needed. Girls are given empowerment classes as a part of their regular curriculum and taught to become self-advocates, and to resist efforts to pull them out of school. Teachers become strong advocates for girls' rights with the parent community. They leave no opportunity to educate the parent community about girls' rights. Students and teachers engaging in campaigns against gender discrimination in the community. Girls are engaged in vocational training from class 8 onwards and helped to find placements after school. They are provided career counselling from class 9 onwards and guided to develop a life plan for themselves. The school helps them develop the capacity to aspire, and they do.

Several experiments in India and around the world that have similarly been successful in addressing the issues of girls' education.

The TUSEME project is a theatre-based empowerment process, which helps develop girls' voices by encouraging them to "Speak Out" against gender-based violence and discrimination at school and at home. This project was begun in 1996 in Tanzania and has spread to 13 countries in Sub-Saharan Africa. The schools that adopted the program report higher achievement scores and reduced drop out and pregnancies, along with an attitudinal change.

The Mahila Shikshan Kendra program in India is an 11-month residential program for poor, illiterate girls and women between 15 and 35 years of age. It is an accelerated learning

program, covering course content up to class 5, with the intention of mainstreaming girls into upper primary public schools. It focuses on teaching life skills, vocational training, computer training and gender training in its curriculum. It is learner-centred, holistic, and feminist in its approach.

CAMFED, operating in rural communities across five countries in Africa – Ghana, Malawi, Tanzania, Zambia and Zimbabwe – provides school fees, supplies, and uniforms to support girls from primary school through secondary school, college, and beyond. Apart from books and school fees, the girls are also assisted throughout their development, from primary school years until adulthood. Therefore, the program allows a girl to get into school, do well academically, and maximise the value of her education after graduation.

The ***Bicycle Scheme*** in Bihar, India provided all girls who enrolled in grade 9 with funds to buy a bicycle to make it easier to access schools. The program increased girls' age-appropriate enrolment in secondary school by 30 percent and reduced the gender gap in enrolment by 40 percent. The Cycle program was much more cost-effective at increasing girls' enrolment than comparable conditional cash transfer programs in South Asia, suggesting that the coordinated provision of bicycles to girls may have generated externalities beyond the cash value of the program, including improved safety from girls cycling to school in groups, and changes in patriarchal social norms that proscribed female mobility outside the village, in turn inhibiting female secondary school participation.

Recommendations

As many researchers have pointed out and is also reflected in the NPGEL policy document, providing education to girls is much more complicated than simply providing access, requiring more effort and sensitivity to the societal conditions of poverty, illiteracy and gender. A reform or reorganisation in procedures and rules in schools, and in the wider education system can do a great deal to reduce the drop out or push out of girls from school. The Bordia Committee Final Report (2010), while evaluating the status of girls' education in India, points out that while there have been improvements and innovations in the area of gender and girls' education, gender equality is still understood largely in quantitative terms. It has recommended the mainstreaming of successful innovations, good practices and processes within the education system, and has invited civil society organizations "to help in the development of appropriate curricula, teaching learning materials, gender informed pedagogies and teacher training." Unfortunately this recommendation has not been followed to the extent it should.

I echo the recommendations made by this government report.

1. ***Undo 'Gender' Inside The Classrooms:***

   Learnings from successful formal school initiatives like Prerna and non-formal programs like the MSKs should be mainstreamed and incorporated in the formal system. They show many useful directions for school organization, teacher training, school-community relationships and student empowerment, which should be adopted in the formal system. NGOs like Prerna, and there are several in the country, running these programs should be invited to work with the Government to incorporate their methods, curricula and processes in the formal system.

   Curricular focus on empowerment and gender: Gender studies should become an official part of the academic curriculum for both boys and girls for post-primary classes, as a separate, distinct course like traditional subjects such as math, science, and language. Education should engage students in critical reflections and analysis of discriminatory social norms. Well-graded, gender education courses should be developed with the help of organisations that have a good track record of doing this already. These should be included in the official curriculum, which invariably receives more serious treatment than anything that is extra-curricular

   Training teachers in Critical Feminist Pedagogy: Gender training with an emphasis on critical pedagogy should form an integral part of pre-service teacher training courses for all teachers, male and female. Teachers and schools must be made to understand that it is part of their responsibilities to ensure that girls come, stay, and learn, and that they are equal persons with aspirations for higher education. Well-designed gender training courses should be included in pre-service and in-service teacher training programs for teachers at all levels. Teachers must become advocates of girl's rights with the parent community, and they should be trained to do this.

   Strong Support Networks: Schools must themselves have higher aspirations for their girls and should work actively to build in girls the capacity to aspire, by including career counselling, skills development, and actively guiding girls to develop life plans for themselves, beyond getting married and becoming mothers.

2. ***Address Societal Barriers Directly:***

   As in Prerna, Teachers should intervene when girls are not attending school or in danger of dropping out because of child marriage. They should counsel parents and enlist the support of local NGOs and the police if need arises. Parents should be continuously educated about girls' rights to equality. The police department, judiciary, child protection services need to be activated to take prompt and serious action when cases come to light.

   More mass campaigns like the *Beti Bachao Beti Padhao* campaign should be launched

by the government to raise awareness in the community about girls' rights and their value, and to change traditional perceptions of girls as capable only of domestic, sexual and reproductive labour. Such campaigns should extend to include issues such as child marriage. Schools and teachers must play a role in this, while it should also be made a media CSR effort.

3. ***Enable Access, Retention And Completion:***

Schools should not 'push' girls out: Government should ensure safety conditions inside schools by having more female teachers, strict policies on sexual harassment by staff, separate girls' toilets, and travel vouchers where girls have to travel long distances. In cases of very remote regions, distance-learning programs should be put in place, using simple video and mobile technology. Here too, NGOs and corporations can be engaged to lend their experience and expertise.

Ongoing financial support: Provide financial support to ensure that girls transition to and complete secondary school. This includes making education for girls free and compulsory till class 10 at least. All KGBVs and other residential schemes should be extended to class 10 and finally to class 12. They should not be treated as 'schemes' anymore, as they are essential in ensuring girls even in remote areas receive education. They should be made a part of the mainstream educational system, with adequate funding, staffing and good management, with a special item in the budget, so that it receives the funding it needs and deserves.

Just as CSR efforts are being recruited to build toilets in schools, providing scholarships to girls post primary could also be put on the list of what CSR funds should cover. Countries like Kenya and Malawi have done this successfully.

Vocational training: Career counselling and Vocational training should be provided. This allows girls to maximise the value of their education and provides incentives for completion. The support of industry should be enlisted for this.

Most importantly, the government should exercise and display a strong political will to ensure access, completion, and achievement for all girls. All the government programs already in place should be implemented with greater seriousness, efficiency, and care. This implementation should be monitored regularly by civil society and the government together.

Given the scale of the problem, the government should not try to do it alone. The support of civil society and industry should be enlisted. They should be made welcome by removing unnecessary red tape and by including them in strategic planning.

In sum, a holistic, integrated, multi-pronged approach is required to address all social, economic, and school-related factors and challenges to girls' education. Schools can indeed defeat the social obstacles to girls' education if they are so committed and engage actively to counter the gender-based factors that keep girls out of school in order to "keep in" girls who are in danger of being "pulled" or "pushed" out. They can ensure that girls complete, learn, and emerge as strong empowered young women with a perception of themselves as equal and autonomous.

KEY POLICY INSIGHTS

- *Access to education is important but not enough. It is important that girls not only enrol but also that they stay and complete school, and most importantly, learn and leave school as empowered young women in control of their lives*
- *Girls don't drop out, they are 'pulled out' or 'kept out' by parents, and 'pushed out' by schools that are unable to address girls' education sensitively. Therefore, there are two broad sets of challenges that need to be addressed: the nature and type of education provided within schools, as well as household and societal factors.*
- *Various Indian governments have demonstrated a commitment to address the challenges surrounding the education of girls. The Bordia Committee Report and the NGPEL, for instance take a comprehensive approach to frame the challenges and solutions. But implementation is seriously lacking, and the government should work seriously to implement such policies and plans – by improving management structures, reducing corruption, and demonstrating political will.*
- *The key lesson from successful experiments is that access to education must be coupled with better quality, and continuous support and guidance through all levels of schooling. Schools and teachers must also work closely with parents and communities to communicate the value of education and prevent drop outs, and mobilise community support to intervene as and when needed*
- *The scale of the challenge is enormous, and the government cannot and should not try to address it on its own. Various NGOs in India and abroad have shown how girls can be kept in school, can learn, and be empowered, and their support should be enlisted and welcomed. NGOs may be used for teacher training, content development and setting up processes that have been successful.*
- *CSR efforts in the area of girls' education should be similar supported, and*

corporates should be provided focused avenues to invest in: infrastructural needs such as toilets and bicycles; scholarships, free books, and uniforms; technology support; and career guidance and training.

- *The Government, along with all relevant stakeholders – including teachers and schools, as well as NGOs – should work very hard at changing mind sets through campaigns such as Beti Bachao Beti Padhao. It is critical to keep mounting large-scale campaigns on child marriage, domestic violence, need for gender equality at home, value of girls' lives and their development, and enlist the support of teachers and community leaders for this.*

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CHAPTER TEN

The Right to Education Act: Increasing Access while Limiting Quality

Shamika Ravi

Introduction

The Right of Children to Free and Compulsory Education Act of 2009 (RTE) ignores entirely the tension inherent in applying the words 'Right' and 'Compulsory' to the same concept. Unfortunately for India's children, this is not the only thing the act ignores. The legislation is undoubtedly well intentioned – it sets out to provide every child in India, regardless of economic status, the right to a free and compulsory education in a neighbourhood school till the eighth grade. The focus on primary education too is welcome, especially as primary education had traditionally never been a political hot button in India, and suffered hugely as a result (Dreze and Sen, 2002). In this essay I examine whether the good intentions behind the act have managed to translate into actual gains, paying special attention to the stipulations for the economically weaker sections.

What does the act say?

The legislation states that every child between six and fourteen years of age shall have the right to a free and compulsory education in a neighbourhood school till the eighth grade. The act places an obligation on the 'appropriate' government – state or centre – to ensure compulsory admission, attendance, and completion of schooling of every child. For this purpose, the act requires

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schools established, owned or controlled by government to provide free and compulsory education to all students.

For schools that receive aid from the government, it requires free education be given to the same proportion of students as the proportion of its recurring expenses covered by government aid, subject to a minimum of twenty five percent. For unaided schools, it requires that they admit twenty five percent of students in class 1 from economically weaker sections and provide free education to them. These children of economically weaker sections are to be defined as belonging to a parent or guardian with annual income lower than the minimum limit specified by the government. The schools are reimbursed per student at the cost borne per student in government schools, or actual cost borne by the school, whichever is less. No 'capitation' fee – money charged for admission – or screening procedure is allowed for admission.

The act goes beyond simply requiring all children to be admitted in schools. It also requires all schools to be 'recognized', and this recognition is granted only if they fulfil certain criteria, all of which are purely input based – a minimum teacher-student ratio, buildings, playgrounds, hours of instruction, and such.

The responsibilities of the teachers and schools laid out in the act too are entirely input-based, and in fact they go so far as to explicitly ignore learning outcomes, preventing schools from holding children back in a class or expelling them from school even if their progress is found to be unsatisfactory.

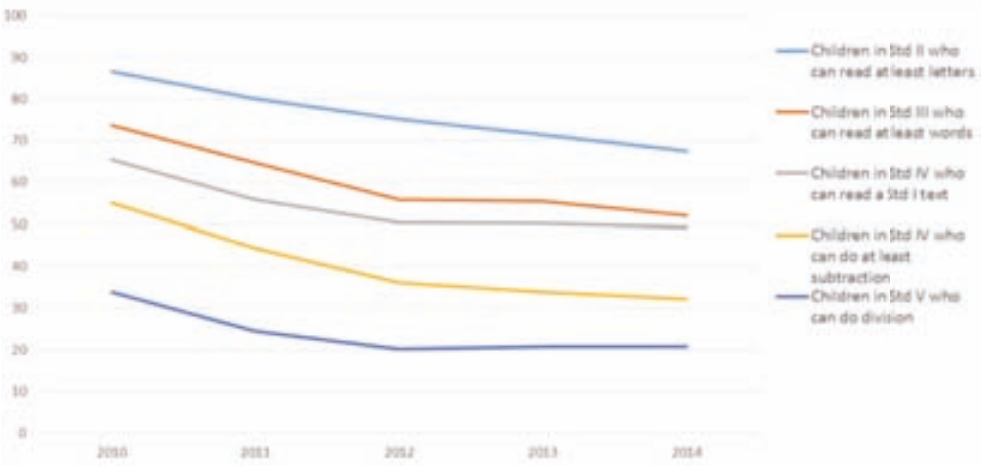
What has the act achieved?

Disappointingly – but given its neglect of learning outcomes not surprisingly – multiple sources indicate that after the RTE, while the percentage of children enrolled in schools has gone up, there has been a significant drop in their learning outcomes. The Annual Status of Education Report (ASER) shows that in government schools, the number of children in standard II who can read at least letters has fallen from 86.6 percent in 2010 to 67.5 percent in 2014, children in standard III who can read at least words have fallen from 73.7 percent to 52.1 percent, and children in standard IV who can do at least subtraction have fallen from 55.1 percent to 32.3 percent.

Young Lives, a longitudinal research study following two cohorts of children – the first cohort completing 12 years of age in 2006 and the second in 2013 – found that 67 percent of the children in 2006 answered mathematics questions correctly; this number fell to 53 percent in 2013. Among government school children, the gap was even larger at 20 percent.

Both ASER and Young Lives data report that this drop in learning outcomes has been seen in both government and private schools, although the drop is much more precipitous in government schools.

Fig 1. Learning outcomes in government schools after introduction of RTE



Source: ASER report 2014

This impact on private schools is one of the ancillary negative consequences of the act. The system of government run schools has long been recognised as a very low quality provider of education. High teacher absenteeism, a lack of accountability stemming partly from unionization and involvement of teachers in the political process, and poor infrastructure are all factors that have led to very low actual and perceived quality of education provided in government-run schools (Kingdon and Muzammil, 2001; Chaudhury et al 2006).

The space vacated by the government school system was being filled by low-cost private schools that have been found to outperform government schools even after controlling for student intake (Govinda and Varghese, 1993; Kingdon, 1994, 1996; Tooley and Dixon, 2002). Not only do private school teachers perform much better than their government school counterparts, they do so for much lower salaries and much less job security (Kingdon 2007, Muralidharan and Sundararaman 2013). Of course, the rapid growth in enrolment at private schools provides another indicator that they are superior in quality, for large numbers of parents choose them over the free government system.

But the RTE has promoted a lowering of standards even in the private system by mandating that children cannot repeat a year. Worse, with the requirements that the RTE lays down for inputs, it either forces low cost private schools to close down, or to raise their fees to

meet – often unreasonable – input norms, effectively acting as a very high regressive tax in private schools that cater to the poor. This is far from a purely theoretical concern. Several news reports show that many such private schools have either been closed or asked to close, and NGOs in the education field corroborate these articles. As a Center for Civil Society report states:

> *"CCS field coordinators in the National Independent Schools Alliance report that 4,331 schools have already been shut down in 17 states – 2,500 in Punjab, while another 15,083 face threat of closure (as on 18 March 2014) affecting over 18,00,000 students."*

Given that the quality of education provided by the government school system is so abysmal, taking away the option of private schools, whether or not they meet the RTE input standards, is an extremely ill-advised move – assuming, of course, that we care if children are actually learning, as opposed to going to a school that has a building and playground of a certain size.

Impact of the Policy on Economically Weaker Sections

Implementation:

The guideline to unaided schools to admit 25 percent students from economically weaker sections is another disguised tax, although not as regressive since the government reimburses the schools for each child admitted, up to a limit of what the government itself would spend.

The rules for unaided private schools on admitting students from economically weaker sections have perhaps generated the most controversy, but it is unclear whether they have had or will have a significant positive impact on educating the children of the poorest.

In the few surveys and studies so far, awareness of the scheme is low. For instance, only 3 percent of slum dwellers in Delhi, where the scheme for economically weaker sections (EWS) has actually been in place for slightly longer, were aware of it (Bannerjee, et al 2012), and only 0.4 percent were using it.

The state-wise variation of the definition of 'Economically weaker sections" also raises interesting questions. According to a report in *The Hindu*, for instance, Karnataka has fixed this threshold at an annual income of Rs. 3.5 lakhs, which is significantly higher than other states, but also the consumption around Karnataka's own poverty line (as defined by the Tendulkar method). In Tamil Nadu, which is a higher income state, the threshold is fixed at Rs 2 lakhs, and in Andhra Pradesh at Rs. 60,000.

Eventually, whether a high or low ceiling for defining the EWS, and indeed, whether the entire exercise of reserving 25 percent seats in private unaided schools actually serves the purpose of furthering equity in education, both remain open questions.

Anecdotal evidence from Delhi suggests a range of challenges with implementing this quota, integrating students, and assuring learning. School managements, for instance, may use competition among the EWS quota to charge fees. Teachers and students, on the other hand, may discriminate against EWS students, potentially even run separate afternoon shifts for them, or may simply not admit them. Against an expected intake of 180,000 students under the EWS quota, only 15,000 were admitted in 2009 (Yagnamurthy, S. 2013).

Another concern expressed by some parents of the "75 percent" is potential negative effects on their children from admitting EWS children. However, evidence from an American program that that sent students from poor inner-city Boston neighbourhoods to high-income schools in the suburbs suggests no such negative peer effects were found on the academic achievement of higher-income students.

Learning:

But the most important question is if attending private schools has helped students from economically weaker sections to actually learn. Unfortunately, in this regard, it has been found that children from underprivileged backgrounds find it hard to compete or keep up with those from richer backgrounds. For struggling children, improved attendance or more inputs to a system catering to the elite does not make much difference in learning outcomes, because they are unable to follow what is being taught in class. The curriculum in many developing countries tends to be oriented towards strong learners, leaving many students behind. These findings are especially relevant since students admitted under the EWS quota are often faced with a transition from a Hindi-medium government school to an English-medium private school. Children admitted under this quota are also often first-generation learners with limited support from within their families and communities. Teachers who have EWS students in their classrooms widely report that the students' difficulty to understand is often due to such a transition and inability to comprehend what is being discussed in class (Geetha, 2014).

Thus, a focus on interventions specifically targeted to help weaker students is crucial. A study involving remedial education programs implemented in Mumbai and Vadodara, and reaching over 15,000 students over 3 years, hired young women to teach basic literacy and numeracy skills to struggling students (Banerjee et al. 2005). The authors found that the large gains experience by children at the bottom of the test-score distribution increased the average test scores of children in treatment schools by 0.28 standard deviations. A computer-assisted learning program in which students played educational games on

previously unused computers, increased math scores by 0.35 standard deviations.
These findings are especially relevant to EWS students entering private schools who need additional assistance and attention, to facilitate the transition and address the lack of support at home that their classmates might have. In a report examining the assimilation of EWS students in private schools in Delhi, Indus Action (2014) highlights successful "bright spots" – schools that implemented a host of inclusive practices to support students. These included a range of endeavours, including special remedial classes, booster classes, or tutorials to address the needs of struggling students; small class sizes; programs to get parents involved with the school; engagement with families and communities; and circulars in vernacular languages.

Of course, several of these schools may be categorized as being 'elite', with the resources necessary to adapt to the changing demographics within the classroom. Not every school for instance has small class sizes to facilitate individualized attention to students. So, the challenge is to determine how these successful interventions may be replicated in private schools that currently lack the physical, financial, and human resources to implement them.

Conclusion

The RTE act, with its emphasis on input norms and its neglect, even disregard for learning outcomes, has resulted in a significant drop in independently measured indicators of children's education at the primary level. These indicators have fallen most sharply in government schools, where the majority of children of the economically weaker sections study.

Nor is the RTE the path to equity in education that it appears to be. It has led to attempts to close down private schools that currently provide the only reasonable quality education to large numbers of children. Such a move would relegate these children to participate in the government school system that has been shown to perform abysmally. To those schools that the RTE does not close down, it adds a highly regressive tax by specifying input norms that are not necessarily causatively linked with good educational outcomes. The 25 percent reservation for EWS students in private unaided schools, many of which, particularly outside the large cities, are low-cost operations already attempting to serve the market at the bottom of the pyramid, is fraught with potential problems and obstacles, and, despite some "bright spots", it is not clear that this move will actually provide a conducive environment for children of the poor to learn and grow.

Overall, the evidence points to a need for amending the RTE to, on the one hand, define requirements pertaining to learning outcomes, and on the other, relax the stringent input norms, and make them context- and region-specific, so that schools that offer quality learning in poor communities are not forced to close down.

KEY POLICY INSIGHTS

- *While the RTE has led to an increase in the number of children enrolled in schools, its neglect – and often, disregard – of education outcomes, has caused a significant drop in learning levels*
- *Drops in learning outcomes have been seen in both government and private schools, but the drop is much more precipitous in government schools*
- *RTE has promoted a lowering of standards even in the private school system by mandating that children cannot repeat a year, despite low performance and failure to keep up*
- *The stringent input-requirements imposed by the RTE act as a very high regressive tax in private schools catering to the poor, causing several low-cost private schools to either close down, or to raise their fees to meet these – often unreasonable – input norms*
- *The rules for unaided private schools on admitting students from economically weaker sections have generated immense controversy and remain unclear:*
  - *There are wide variations between states on the definition of 'economically weaker sections'*
  - *Awareness and use of this scheme among the marginalized remains low*
  - *Anecdotal evidence from Delhi suggests a range of challenges with implementing this quota, integrating students, and assuring learning*
  - *While there are some bright spots and successful practices – including remedial classes, outreach to parents and communities, and small class sizes – their ability to be replicated especially in low cost private schools, is questionable*

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View From The Last-Mile:

Bridging the Gap between Right to Education and the Right to Quality Education in Private Schools

Ambika Gulati

The Indian Parliament enacted the Right of Children to Free and Compulsory Education in 2009 (RTE) to achieve the Constitutional mandate of universalising elementary education. Clause 12 (c) of the Act states that every private unaided school needs to admit at least 25 percent students from the disadvantaged and economically weaker sections of society. In light of this mandate, the overarching question is that while schools admitted this new demographic of students under state compulsion, how did they alter their existing systems and processes to be able to provide quality education to them?

To discuss this question, I will take the example of Sanskriti School, New Delhi. Sanskriti is a private school that is perceived to be 'elite' given that is was established to serve the children of civil servants and defence personnel. At its inception, the school's student body consisted of children of bureaucrats, armed forces personnel, politicians, and 'elite' professionals including doctors, lawyers, bankers and consultants. It is worth emphasising that when the school was established, there was no provision for or admission of students from marginalised backgrounds. The teachers were from similarly 'elite' backgrounds and the curriculum was designed in keeping with the background of students -The curriculum definitely assumed parental involvement and guidance in their child's learning process along

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with a certain financial support, for example, on developing projects or sending students for outstation trips.

Following the 2004 Delhi High Court order, Sanskriti admitted students from marginalised backgrounds. These students are now in grade 9. In the last 11 years, the school has constantly endeavoured to provide its students with both, an equitable experience in school as well as quality education. In our experience, addressing three main issues can make a significant difference in the lives of students:

- School leadership and policies
- Teacher mindsets and assumptions
- Curriculum and Pedagogy

Marginalised students are not only provided with free education - including books, uniforms and stationery - but are also not charged for sundry expenses such as annual day charges or payments for voluntary outstation trips (which other parents need to pay for). In fact, the school has successfully sent a few marginalised students on international exchange programmes in the last two years. The school leadership believes that the inability to pay for educational activities should not hinder students' learning experiences. We have also encouraged marginalised voices to be included within parent bodies such as the Parent-Teacher Association and the School Managing Committee. But there is still more work to be done in this area, as it is felt that these parents are overwhelmed in such settings and hesitate to share their concerns.

Some other systems have also been modified to aid the integration of marginalised students into the school system. For example, the system of attaching symbols to student admission numbers based on particular categories has been done away with. We not only realised the stigma attached to these symbols but also felt that teachers selectively noticed students and stereotyped them. Further, the system of distributing handwritten circulars in Hindi to marginalised students has been replaced with typed, bilingual circulars for all Junior School students. We noticed that the separate circular regime, often caused marginalised students to feel left out. We also consciously decided to distribute circulars in English to all students after grade 5 as students can then read and explain the content to their parents.

It is argued by many that as classrooms become more diverse, the curriculum would need to become less rigorous. Experience at Sanskriti shows that concepts do not need to be watered down, it is the pedagogy that needs to be changed. At Sanskriti, teachers have created a system of 'student buddies' to help students learn from each other. When concepts like organic farming, step farming etc. are taught, teachers ask students from marginalised backgrounds to share their experiences. Teachers also need to be sensitive whilst planning

lessons and use examples and situations that are within the context of all students rather than a limited few. For example, if students are learning about fruits, then teachers need not speak about cherries and plums. Similarly, movies like Cinderella could be replaced with *Chhota Bheem*.

A critical aspect in providing quality education to students from marginalised backgrounds is to realise that they have no academic support at home. This is incidentally an aspect that several private school teachers and principals blame for the poor academic performance of such students. We have evolved a 'Fast-track Programme' in which students are provided support after school hours in an effort to bridge the language gap, complete homework and build on concepts that may not have understood in the classroom. The students are also given necessary time and resources (in terms of access to internet, library) to work on projects. The school also realises that parents may not have the time to provide lunch for these students, and therefore a hot, healthy meal is provided after school. Initially the programme was restricted to the Junior School, but as the initial batch of marginalised students move up the school chain, the programme has been extended to the Middle School and is today, applied in the first year of the Senior School as well.

Over the last few years, we have noticed that the academic performance of these students has improved as a result of the Fast-track Programme. In fact, the Head of the Junior School remarked that it is very difficult to make generalised statements on the weak academic result of marginalised students anymore. These classes have also helped the students to increase their levels of confidence and self-esteem. One student recently commented that these classes not only help in academics but also aid in expanding the students' horizons as they feel comfortable in questioning and seeking answers. By the time the students reach grade 8, we find that they are quite independent in completing homework and projects. Students only need support in terms of clarifying and further exploring concepts.

Another important piece in providing quality education to marginalised students is helping teachers change their mindsets and prejudices about these students. Since teachers are not from the same background as these students, they are often insensitive to the students' needs. Teachers are also quick to stereotype students from different backgrounds. In initial years, teachers in Sanskriti categorized students as 'our students' or 'normal students' and 'EWS category students', clearly discriminating against the latter. Their way of thinking was also reflected in generalised statements such as 'they smell', 'they use bad language', and 'they steal'. On the other hand, teachers who showed care, understanding and respect toward all students realised that it also improved the self-esteem of marginalised students within the peer group. In our experience, constant counselling sessions and discussions with teachers have resulted in them being more reflective and able to understand their students better.

Do children differentiate between each other on the basis of socio-economic considerations? The RTE is correct in stating that classrooms need to be made diverse at the entry-level itself as children at that age do not discriminate among each other. Our experience at Sanskriti endorses this. It is the adults- both teachers and parents- who create these differences in students' minds. We have also received requests from parents to change their child's section as they feel that there are too many marginalised students in a class. In many cases, they have also asked their children to not be friends with a marginalised student. Providing 'quality education' is not only the responsibility of the school. Parents of affluent students have a role to play in ensuring that all students get 'quality' experiences in school.

The journey of educating the marginalised has been a challenging one. To begin with, schools were given no time to plan and think about how to provide quality education to these students. We are in the process of learning every day. We find that the documentation proving the marginalised status of students' or their dates of birth are often incorrect. We also found that when we admitted three students in the Middle School, they all left school the following year as the medium of learning and social exclusion was too much of a burden. In some cases, the learning gaps are also far too much to cover and such students struggle in the system.

The challenge in translating the Right to Education into the Right to Quality Education is to question the dominant way of thinking in private schools so that they can emancipate and dignify the lives of the marginalised. Management, teachers and parents must collectively and individually reflect on school practices, pedagogy, mindset and assumptions that will help schools to evolve as providers of quality education. We need to take small steps to make a large difference in the lives of our students.

4

Acceleration

CHAPTER ELEVEN

Enabling Innovation and Experimentation

Pooja Bhatt

Poised to be the largest contributor to the global workforce by 2030, India's ability to capitalize on this 'demographic dividend' is dependent on its ability to prepare its citizens entering the workforce with '21st century skills'. In fact, revolutionizing the 'archaic' public education system (likened to a 'factory model of education') to a '21st century public education system' that prepares youth with the required skills to thrive in knowledge-based economy is the main issue for the next decade for many nations around the world. For India, this means that it will be insufficient to achieve the 'basic' education objectives related to enrolment, retention and literacy. While such baseline measures remain important from an equity perspective, new or refined objectives that exhibit the Indian education system's ability to build the required skills for success in the knowledge economy will need to be achieved.

This is the complexity of the challenge for the Indian education system: not only is there a need to build capacity to provide equitable access to education for all its citizens, there is also a need to transform the education system so that it effectively prepares its citizens for the future. This will require a non-linear progression or to use a colloquialism "the ability to run before learning to walk". In short, this translates into an urgent need for the Indian education system to leapfrog from being a system that imposes 'rote learning' to one that focuses on skills-based education that rewards creativity, original

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thinking, research, and innovation. This need is critical as accelerating access to this type of 'quality education' is essential for children who are in school today so that they are equipped to contribute to society effectively in the future.

It can be stipulated that an enabling environment that encourages innovation and experimentation creates the opportunities for children to develop the skills required for the 21st century. Creating such an environment for children requires a supportive ecosystem that allows for teachers (and by extension school leaders) to innovate and experiment with teaching methods and tools to meet the requirements of the diverse student needs in a classroom.

Creative Learning and Innovative Teaching

In the gallant pursuit of uniformity, well-intentioned education policies have provided prescriptive rules to guide curriculum, pedagogy and learning assessments of knowledge acquired. While child-centered, activity based learning environments have been recommended in the National Education Policy since 1986 -and were integral in the education models advocated by Tagore & Mahatma Gandhi - the implementation and monitoring of the policies have, in reality, been translated to administrative 'checklists' instead of any real changes in the dynamics of a classroom.

These gaps continue to be exposed through evidence of low or poor learning levels by various studies. Furthermore, while the focus on 'child friendly' classrooms and joyful learning is understandable and required, it can be argued that a push towards an enhanced pedagogy that focuses not only on 'knowledge acquisition' but also on 'knowledge integration', which entails the ability to apply, analyse, extrapolate and validate knowledge acquired, is critical to build the required '21st century skills.'

Europeans have determined that education that nurtures 'creativity and innovation' is fundamental to build a 21st century knowledge society. Researchers view creativity in education as a form of knowledge integration and have defined 'creative learning' as learning that involves understanding and new awareness with an emphasis on thinking skills. 'Innovative teaching' is defined as the process that leads to 'creative learning' through the "implementation of new methods, tools, and contents which could benefit learners and their creative potential" (Ferrari, A et al, 2009).

Creative learning requires innovative teaching which is both the practice of teaching for creativity and of applying innovation to teaching. Most importantly, innovative teaching

requires the recognition that teachers are the primary agents for maintaining a creative classroom environment. Allied institutional support (from school leaders, parents/community & school administration) as well as appropriate policy refinements are also needed to blossom creativity in Indian classrooms.

Therefore, nurturing 'creativity & innovation' requires a paradigm shift that recognizes teachers, as the 'frontline' or key change agents to construct a creative climate, who need to be strengthened by enabling institutional systems that encourage innovation & experimentation as well as value creativity. This would be in stark contrast to the scenario in the Indian education system today where teachers, at the lowest rung in the totem pole, are squeezed from all directions through administrative mandates, challenging classroom & working conditions, and demanding community/parental pressures. 'Whole Systems Transformation'[1], an approach that calls for all parts of a system to be modified, is consequently required for the Indian education system to accelerate the shift from one that monitors knowledge acquisition to one that fosters knowledge integration by nurturing creativity and innovation.

Systemic Transformation

Systemic transformation of Indian education that supports creative learning and innovative teaching requires fundamental changes in organizational, social, and cultural arrangements which can be driven by changes in policies as well as mindsets. In order to aid ownership and alignment, it is important to recognize the role of the government in driving policy innovations 'top-down' through perscription, regulation and support, as well as 'bottom-up' through facilitation of development and diffusion of innovations which originated from within the organization or network in the delivery system.

Furthermore, equal focus needs to be placed on origination/generation of innovative solutions as well as mechanisms and processes by which innovations are diffused and disseminated. The government has three inter-related policy roles to enable systemic transformation in support of nurturing creativity and innovation in the education system (Mulgan and Albury, 2003). These are:

a. *Introduction of new policy directions and initiatives*
b. *Facilitation of innovations in the policy-making process*
c. *Institutionalization of policies to foster innovation and its diffusion*

These policy roles allow the government to introduce significant changes to shift the management, culture, and reward systems in support of the systemic transformation as well as build processes/systems that support ongoing development and introduction of

[1] *Whole Systems Transformation is best practices and theories, developed and integrated into a single approach that enables accomplishment of faster, cheaper, and sustainable positive change.*

new innovations or solutions to accomodate changing dynamics or requirements of the local/external context.

Supportive management, culture, and reward systems are needed to provide opportunities and benefits for key stakeholders to experiment with new ideas and develop successful innovations which may involve creation and implementation of new processes, products, services and methods of delivery which result in significant improvement in efficiency, effectiveness or quality of desired outcomes. For example, the potential for teachers to develop new ideas or apply innovative teaching techniques can be enhanced by creating formal goals for innovation, by providing the space to experiment or test ideas as well as by creating a culture that encourages radical thinking or learning from failure.

In addition, reward and recognition as well as management support for collaborating with others to develop and disseminate new ideas can drastically increase the motivation for teachers to develop creative solutions. Similarly, while not impossible, an unsupportive school leader can hinder the motivation levels of teachers. Hence, restructuring the roles and reward systems of school leaders to be facilitators or coaches instead of 'administrators' would support the teachers in using innovative teaching techniques. Analogous changes throughout the school administration system which reframes the roles and related reward systems of all stakeholders to invest time and energy in assisting with the exploration of solutions to local issues can drive the desired improvement in quality of education to all children. In the private sector, it has been illustrated that some of the most consistently innovative organizations do not focus on innovation as an end. Instead, they focus on clear outcomes, supported by the right organizational culture, rewards and methods that ensure innovation is pervasive.

In order to create an atmosphere that drives innovation and experimentation in the Indian education system, some ideas on new policy direction and initiatives to support systemic transformation across various organizational and technical dimensions are suggested below:

- ***Management:*** The current management and administration system is hierarchical with teachers mandated to follow strict guidelines and administrative tasks. A collaborative, supportive management structure, which includes other teachers, school leaders as well as block/cluster resource officers, that enables and supports the teacher to develop new methods/tools for teaching would foster an atmosphere for innovative teaching.
- ***Rewards/Recognition:*** Rewards and recognition as well as management support for collaborating with others to generate and share new ideas or solve day-to-day problematic situations can drastically increase the motivation for teachers to perform better and support each other as a result. 'Whole School Report Cards' with

dimensions on fun, creativity, innovation and quality of education which can be used to drive 'healthy' competition at local levels may foster joint ownership of school's performance by school leader, teachers, parents, administrators and the community.

- ***Culture:*** Providing institutional and policy support for teachers to apply 'innovative teaching' does not equate to providing training or capacity building support. It requires a mindset shift to value teachers as the primary source of connection to the children (the 'customer' of the school system) and reframing the institutional support (from school leaders as well as administrators) to provide the required guidance, collaboration & incentives to play this important role.
- ***Curricula:*** Curricula should undergo a skilful and thorough development giving the same importance to every subject, taking creativity into consideration and defining it coherently through the curriculum, allowing freedom and time for discovery and taking learners' interest into account.
- ***Assessment:*** Assessment should allow creativity to flourish by valuing it, both at micro, everyday level and at macro, exam level. The three functions of student assessment (diagnostic, formative and summative) must contribute to the development of knowledge acquisition as well skills development for learning and creating.
- ***Remedial support:*** Resources (facilities or otherwise) can be provided to non-school/ non-government actors to provide remedial support to improve learning levels or meet special needs of students with disabilities or other groups during non-school hours.

Supporting the Innovation Process

Policy makers have a role in driving innovation and experimentation in the policy-making process itself. By engaging a range of stakeholders including front line staff (teachers & school leaders), administrators, academics, community leaders, the private sector, and non-government organizations, policy makers can seek support across the following four steps in the innovation process that may lead to introduction of new or refined policy direction or initiatives:

a. ***Idea generation:*** Innovation competitions or evidence-based research can identify potential ideas or suggestions that may be transformational

b. ***Incubation:*** Provision of incubation funds or other support (for simulations, etc.) can provide opportunities to test promising ideas while managing risks

c. ***Replication:*** Leveraging expertise or knowledge from other sectors may develop strong programmatic approaches for implementing new initiatives

d. ***Monitoring & evaluation:*** Application of systematic approaches to understand what

is working and not working for continuous improvement can build self-correcting mechanism for refining policy initiatives

Policy makers can also play an important role to source, introduce and disseminate incremental or disruptive innovations. A few significant surveys of innovation in the public sector has noted that approximately half of the innovations are initiated by frontline staff and middle managers, cutting across organizational boundaries, who are motivated more by recognition and pride than financial reward (Mulgan and Albury, 2003). For instance, 'micro-innovations' identified and collated through efforts led by STIR Education (a non-profit organization) highlight the eagerness and enthusiasm of teachers in sharing individual innovations as well learning from others. Based on these guiding principles, policy makers should structure policy to foster innovation and its diffusion, providing opportunities for collaboration with other educators, administrators and school leaders within existing or new networks and structuring recognition based incentives for creation and dissemination. Policy makers could also introduce new policy-making processes to source innovations from other non-government or private school models which can be customized or reshaped for diffusion in the government education system.

Conclusion

In closing, nations around the world are exploring systemic transformation of their education systems in order to ensure that their citizens are prepared with the skills required in the future. The challenge is only greater in India given the size and scale of its constituents and the criticality of addressing this need to achieve the desired growth and progress. Driving incremental policy changes from 'top-down' through the system will not lead to results quickly. Systemic transformation driven through effective policy making which builds the capacity in the system (which includes government and non-government stakeholders) to unleash the inherent potential for problem resolution and solution development will lead to the accelerated achievement of the desired improvements in the quality of education.

KEY POLICY INSIGHTS

- *A systemic transformation of Indian education that supports creative learning and innovative teaching, requires fundamental changes in organizational, social, and cultural arrangements, which can be driven by changes in policies as well as mindsets*
- *The government plays an important role in facilitating a supportive environment for creative learning and innovation through:*
  - *'Top-down' policy innovations: prescription, regulation, and support, and*
  - *'Bottom-up' through the development and diffusion of innovations*
- *Top-down policy interventions will not lead to change quickly. To accelerate the achievement of learning outcomes, it is crucial to build capacity within the system to unleash the inherent potential for problem resolution and solution development*
  - *This requires a combination of training, change in mindsets to value teachers as the primary connection to students, and institutional support to provide the required guidance and incentives*
  - *Supportive management, culture, and reward systems are needed to provide opportunities and benefits for key stakeholders to work collaboratively, experiment with new ideas and develop successful innovations*
  - *Teacher potential to apply innovative teaching methods may be developed through creating formal goals for innovation, as well as creating a culture which encourages learning from failure and radical thinking*
- *In sum, new policies are needed in the areas of management, rewards and recognition, culture, curricula, and remedial support*
- *Policymakers can seek support across the stages in the innovation process by engaging a range of stakeholders including teachers & school leaders, administrators, academics, community leaders, the private sector, and non-government organizations*
- *Policymaking processes should facilitate sourcing of information from non-government and private school models, which can then be customised to reshape the government education system*

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CHAPTER TWELVE

Accelerating and Scaling Innovation for Revolutionary Change

Shiv Vikram Khemka

Introduction

India's most important asset is its human capital, and the Ministry of Human Resource Development is perhaps the most important Ministry, for whether it is the economic, political, security, foreign policy, or existential future of this country, there is no better foundation for the future than a well 'educated' population. In the last 15 years, since the establishment of the Millennium Development Goals, India has made considerable progress, particularly on access to primary and secondary education. However, real challenges remain with regards to quality and innovation. When one looks at the future of jobs on the planet, in light of changing demographics, new communications, and robotic technologies, the dynamics of global growth, and India's own demographic profile, it becomes clear that bold policy decisions need to be made today, in order to reap benefits 15-30 years into the future, well beyond the short-term political decision-making cycle.

What oil has been for Saudi Arabia, educated human capital can be for India. Considering the four global disruptive forces described in McKinsey's, No Ordinary Disruption, namely, massive urbanization, accelerating technological changes, demographics of aging populations, and increased global trade flows, and taking a 30 year view, India's human capital can be a key strategic asset or a huge liability.

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If India can educate her young population to help support these massive global shifts, and formulate policy to enable and energize an education system that addresses these needs over the next few decades, India can benefit significantly from these coming global trends. The decisions we make in this direction must envision the inevitable confluence of various technology trends, such as ubiquitous mobility, big data and predictive analytics, game-based learning, biometric psychological testing, and various other education technology innovations that will act as force multipliers to completely restructure the way we develop human capital. 'Telemetric platforms and technology hold the potential for a change in education that will resemble revolution' (Patrick Tucker 2014).

These decisions call for great leadership, great vision and immediate action.

Providing Access and Defining Quality

In terms of access to education, which is an essential, but not sufficient condition to educate India's human capital, it seems clear that rapid progress will continue to be made through a combination of physical and virtual technology infrastructure. Mobile broadband will become an important, new delivery channel for learning, reaching out to the remotest parts of the country.

In terms of the quality of education, the content, curriculum, and quality of the individual transactions with each learner must come into sharper focus. At the most basic level, are we educating and preparing our young students to take up the national and international jobs of tomorrow? Many of the jobs we can think of today will not be around in 15-30 years. We need to equip our young people with the skills to be able to adapt to the jobs of the future, both in India and abroad. Further, we need to equip our youth with the life skills and values that will allow them to lead with wisdom, and to participate as constructive global citizens, in an increasingly complex, conflicted and interconnected world.

Continuous Quality Innovation and Implementation at Scale

How can experimentation and innovation be encouraged, incubated, and scaled in the Indian education space? First, as quality is a moving target, it is essential to create the right policy environment to allow regular upgradation of quality through constant experimentation and innovation. This applies equally to early childhood, primary and secondary school, and higher education systems. Further, as these innovations show real, measurable positive outcomes, the second and perhaps more daunting challenge is to find ways to implement these innovations at massive scale.

Creating a Platform for Quality Innovation

The beginning of innovation is to ask enough questions about what is working and what is not, and to be willing to re-invent the status quo without fear of repercussion. Are we creating environments for our teachers, parents and students where this is being done? Are we defensive about being benchmarked against the best in the world? Are we then creating our own definitions about what 'best' means and at least measuring against those standards?

Significant innovation is already happening in education around the world and in India. The direct access to knowledge provided by the internet and technology is changing the old models of education for children in connected classrooms. The teacher as "dispenser of knowledge" is no longer the central model, but rather the teacher as facilitator, guide, and mentor to help make sense of the vast databases of global knowledge that are now accessible to anyone with a smartphone, tablet or laptop. From Silicon Valley to Chile, and from Israel to South Africa, teams of innovators, teachers, game-designers and others are working on different ideas to unleash the power of artificially intelligent, big-data-supported, interactive technology in education. MOOCs and new models of mass communication and instant access to vast databases of information are changing the interaction between professors and students. Teams at organizations such as Coursera, Udacity, EdX, NovoEd, Minerva, Quest to Learn, Amplify, Pearsons, Khan Academy, Education Cities, Pratham, Knewton and many others are experimenting in India and around the world. Much of this content is free.

Yet in India, in the mainstream of our education system, we prefer to evolve rather than innovates. In the beginning of this new age of "the democratization of education", we prefer to be autocrats and dictators, mandating what children should learn, how they should be taught, and who can teach them, through rules and regulation. Significant state and federal funding is going into thinking about ways in which to make the system slightly better rather than to fundamentally redesign a system that has failed to live up to its promise on many counts. A few successful institutions of higher education, such as the IITs, and a few good primary and secondary schools in a country the size of India, is not a sign of broad success. Any thoughtful comparison with Israel, Korea, the US and other countries that are at the forefront of innovation in education is largely unfavourable.

Further, many NGOs and companies are doing good work in early childhood, K-12, remedial learning and even higher education. Yet many of these players are small and are unable to scale. Over 3.3 million NGOs are active in India, of which over two-thirds are active in Education. However, of these, just over 2000 have an annual budget of more than 50 lakh rupees (less than US $90,000). There is little connection between all these players, whose good intentions are being drowned by the scale of the problem, and the inertia and

centralized control of the Ministry of HRD. Many are reinventing what has already been tried and tested elsewhere, or trying to copy successful innovation without adequate access to knowledge, skills, or funding.

Given the existence of these parallel realities, it is important to first establish a functioning innovation ecosystem for education in India, through the creation of a virtual platform that starts with a comprehensive and ongoing survey of what experiments and innovations are taking place around the world. This platform must be open and accessible, allowing screening, categorization, review, data analysis, and evidence-based evaluation of these innovations by the broad community and leading global experts. This open platform might initially reveal many shortcomings in our education system, but would also allow us to design a better system for the future. It would also help draw together a community of interest that could help catalyse a new mindset that looks at the challenges bottom-up rather than top-down and encourages, rewards and supports these initiatives.

The X-Prize global literacy prize is an example of just one such initiative, with specific measurable criteria, a clearly defined problem, and clear incentives for solving the problem. Clearly defining the problems and establishing appropriate criteria, which must include measurability of outcomes, cost effectiveness and scalability, would allow us to create a vibrant innovation ecosystem. This would also allow the best innovations to be subsequently taken to scale, with adequate funding and support from Government, State, Corporate and NGO partners.

Finally, in order to encourage entrepreneurship in education, it is important to create a system that facilitates and incentivises this, including early and development-stage funding, tax and fiscal incentives, school- and university-based incubation hubs, Research and Development Laboratories and regular conferences and events to bring together people working on these ideas to stimulate brainstorming, mentoring, and collaboration.

The Need for Implementation at Scale

"Even the most well thought-out policies may not have an impact if they are not implemented properly. Unfortunately, the gap between intention and implementation can be quite wide" (Banerjee and Duflo 2012)

Looking at innovations in education around the world, models that work well already exist and many can be adapted to different learning environments. Further, broad access to large numbers of learners through technology is becoming increasingly common. Khan Academy has reached over 400 million students online. Interactive technologies, such as games are also at the forefront of new ways to engage learners.

Practical experience is often the best teacher and so experiential learning might also be an excellent way for children to learn. 'Learning to learn' is perhaps the key skill needed by learners in the future, as well as learning how to solve problems and to work together in physically connected and virtual teams. Crowdsourcing and collective, connected, crowd behaviour is changing the way the world works, from research and development to media and finance. How can we teach our young people these skills and get them involved in these new virtual worlds? How can we take the best innovations and replicate them at scale? Do we do this through public-private partnerships? Is technology the solution? Can we train enough teachers fast enough and with adequate quality for this implementation challenge?

Specific longer term goals, such as eradicating illiteracy by 2030, or achieving a basic level of mathematical or coding capability across the general school population by 2025, require the scaling-up of models that work at a small or medium scale in an economical and efficient manner.

Various elements are needed to scale such 'ideas that work'. First, the necessary political, human and financial resources must organise behind them to allow this broad scaling. Second, technology, as a key enabler, is essential to this scaling. Finally, concerted, coordinated, collective human intervention will allow this scaling to be effective. Technology alone will not likely be enough.

For India to innovate and take a leadership position in global education, policy makers will have to take bold steps. The following four ideas can help create the conditions for this 'revolution' in education.

Four Pillars of Innovation and Reform

Curriculum innovation

Are our curricula appropriate in terms of content and structure, to deal with the challenges ahead? Should each curriculum be mandated so precisely from "above" or should it develop continually in a much more fluid and crowd-sourced manner, an updated and always current wiki-curriculum, curated by an independent group of experts, practitioners and students? A huge number of global curricula in the cloud will become accessible to everyone during the coming years, and learners will be able to 'pull down' what they want to learn. Helping define 'what?' and 'why?' they might want to learn, will be much more important than mandating specific curricula.

It seems likely that free, cloud based, open-source curricula, will be the shape of things to come. Just as Wikipedia is today the standard encyclopaedic resource, not the long

dominant, printed, Encyclopaedia Britannica of the past, or even Microsoft's web-based Encarta, a number of constantly updated and crowd/expert-curated curricula are likely to emerge in the coming years. Using predictive data analytics, big data, and artificial intelligence, these curricula will allow real feedback loops to students, parents and educators, allowing education to becoming increasingly personalised and appropriate to each individual learner.

Instead of trying to reform the curriculum, policy makers should open up the curriculum to our teachers, students, and the broader community to experiment and build 'our part' of this global curriculum. The government should set up technological capacity to curate and manage this virtual curriculum innovation laboratory with world class academic and technology partners. Suggested pathways through this curriculum and appropriate testing to ensure that a 'foundation pathway' is followed should be the objective. Everyone needs to learn to read and write and perhaps code, but beyond that let the rigidity of the curriculum and teaching methodology not interfere with real learning. Trying to control the curriculum 'top down' in a country of India's size and scale is likely to be slow, bureaucratic, and ultimately unsuccessful. The curriculum may be grouped into various core buckets such as Literacy, STEM, Arts, Values, Entrepreneurship, Life Long Learning, Teacher training, Vocational Training, Languages and so on. Rather like the IB curriculum, children can then create a foundation pathway, which leads on to a number of pathways depending on the interest and aptitude of the learner.

Learning how to learn, learning how to create, problem solving, critical analysis, teamwork, leadership skills, values, and adaptability to change will perhaps be the bedrock of this new curriculum, not specific subject content or rote memorization.

Education Technology Experimentation: Global Education Technology Innovation Network (GET IN) Laboratories

The government should encourage a deep focus on technology based solutions to education and should open up the market to all education providers from around the world who would like to help develop our human capital, for the domestic and global markets. State governments, with appropriate domestic and global public and private sector partners, should create the virtual and physical infrastructure to allow education innovators to access these 'virtual laboratories', where experimentation would be encouraged and monitored. Schools and Universities would become the testing grounds for these experiments and students and teachers would collectively and individually have the option to opt in or out of these innovation programs. Funding could come from State Governments, multilaterals such as the UN, Global NGOs and Foundations, Corporate CSR commitments and incentive competitions. The governance of these institutions would be independent from

the government, but with adequate government participation and oversight. The Indian diaspora would be encouraged to get involved with these Innovation Laboratories and help attract global partners to test new ideas and build academic rigor into the assessment and evaluation of outcomes.

Over time these laboratories would find and develop their own specializations, depending on their partners, funding and areas of activity. For example, some might focus on curriculum testing through gamification, while others might focus on the potential of technology and other solutions to alleviate specific problems. One could imagine, for example, a GET IN Teacher Lab, which would grapple with the issues surrounding teachers in the current and new education environment, asking difficult questions and crowdsourcing answers and ideas.

The Education Technology Revolution has the potential to become a tsunami within the next decade, changing the face of education on the planet, just as e-commerce has changed the way people shop, and created giants such as Amazon and Alibaba. India should assiduously create incentives for such experimentation to take place in India and for such laboratories to spring up in our states. States should compete with each other for this innovation and experimentation, and incentives should be transparent and accessible. We have a unique chance to be a leader in this field and an early adopter, rather than a follower. Opening up our systems to the world and creating the right incentives for global players to come to India are key. Trying to restrict and control the education space top down will just hold India back.

National Education Service for all graduating Students in Class 10 and Class 12

The Government should put in place a system that draws best practices from the National Service systems of Israel (IDF), Korea, Singapore and the higher education program of Kazakhstan (Bolashak), but one that is designed specifically for our needs. Given the interest in our growing market, these countries could provide valuable design expertise and advice. The Indian program could have several tracks such as Practical Education, Education and Health, Education and Security, Education Technology, Education and Skilling and Entrepreneurship Education. This program would be deeply connected to the GET IN laboratories and would act as an implementation arm of "ideas that work".

The results of these programs in their home countries have been exceptional, although different in each country. In Israel, the great success of this "Start-Up Nation" was largely fostered by the culture of innovation, entrepreneurship, problem solving, teamwork, resilience and deep technology culture of their mandatory national service with the Israel Defense Forces (IDF). In Singapore, the high quality of the human capital in government and the bureaucracy is similarly largely due to an intense focus on early leadership training

for exceptional leaders, and a broad based cultural identity development program through the post school draft program into their National Service. In Korea again, the tremendous technology-centric, education based, development of the country has benefitted greatly from their compulsory National Service. In Kazakhstan, the most talented graduate students are given scholarships to study at the best Universities in the world and are expected to return to Kazakhstan after their studies to contribute 5 years of their lives to serve their country. These students have been sent in equal numbers to Europe, the US and China and today number over 10,000. Most have returned to Kazakhstan and today form the backbone of the government, administration and leading domestic enterprises, and have helped build a country in just 20 years that stands out as a leader in terms of economic growth and development in Asia!

This idea of National Service is not new, but is perhaps one whose time has come. Sister Nivedita, formerly Margaret Noble, born in England in 1867, who became a student in Swami Vivekananda's mission, suggested a similar idea over a hundred years ago. "An army of young men and women, not to serve in the military after school, but rather as an army of teachers, serving the common man in every city, town and village... If this army of education could be set in motion, the whole country would be literate in a few years."

Unleashing this human capital through a National Education Service program, with the right training and the support of technology and incentives, could be an excellent way to achieve the goals of scaling Innovation in Education in India within a short period of time and at relatively low cost, while bringing social discipline, national integration, and a sense of service to young Indians. Further, the very act of teaching others, would itself teach our young people many important things from attitude to empathy, that they might not have learnt at school, or from computers or books.

A Sharp Focus on Universal Values and Global Citizenship

One needs to only look at Japan, Korea, Singapore, the US, the UAE, Israel and other countries that have made education the core pillar for the success of their nations. And the results over several decades are clear. However, in each of these cases, education includes a 'values' framework, that includes culture, art, family, spiritual traditions, and other soft skills that are difficult to define and measure, and yet are the underpinning of the real success of these countries' economies.

India has been the source of great spiritual experimentation, a global laboratory that has accepted, absorbed, and welcomed all spiritual traditions, not just tolerated them. This has been our great strength. Spiritual education was always seen as the most important goal of the educational process, building upon the basic building blocks of literacy, arts, sciences,

sports and leadership. Spiritual education is the hardest education as it requires an inner journey, and teachers qualified to act as guides and facilitators, who have trodden the path themselves, and act as role models of behaviour.

As few such teachers exist, a vacuum has been created which is filled with God men, gurus and self-help guides, some enlightened, many false and most concerned with commercial gain. Trust has been lost in these teachers as their personal conduct reveals a big gap between what they preach and what they practice. Developing and articulating a focus on Universal Values and working with groups such as Templeton Foundation and others to encourage this foundational teaching in schools and universities will allow us to rebuild moral leadership and strength and to act as a source of wisdom for ourselves and others.

Education for Global Citizenship should be the basis of our education system, encouraging our youth to look at the world as their home and the planet's problems as their own. National programs such as Swachch Bharat, Education against Gender Based Violence, programs such as Aamir Khan's Satyamev Jayate, would all fit into this theme, but could be broadened to look at the Sustainable Development Goals as the basis for our own educational system. This would create a much greater motivation to connect India to the world and to become integrated into the global labor pool while taking advantage of global demographic changes over the coming half century.

Conclusion

Although evolutionary change can work, what is really needed now is revolutionary change in our education system. As our planet adds over 2.5 billion more children over the next 30 years, will we manage to create a more equitable society in our country and abroad? According to the WEF, 8 percent of the world's population today shares 83 percent of the world's wealth. Is this sustainable? The 25 richest people on our planet have as much wealth as the bottom 3 billion. Is this sustainable?

What are we teaching our children? Is it just about earning more, or is it perhaps about leading a life of service to their communities, countries and planet? What will it take to change these mentalities? Are there enough role models for them to follow? Are there enough leaders for them to support? Can those who have the desire, ethics and ability to lead, be afforded the training and the opportunity to lead? Can we gradually move from the will-to-live, to the will-to-love as the basic foundation of education? With the will-to-live we create a world with everyone fighting for resources, whereas with the will-to-love, we create a world where everyone shares resources. As Gandhiji said, "We have enough in this world for our needs, but not for our greed." What Education model will allow us to get these values across to our citizens?

We add 25 million children to our population every year. Research has shown increasingly that the first 3-5 years of a child's life, sets them up for the rest of their lives as learners and engaged and productive members of society. Are we willing to invest the resources to give them the right start? The time for a long national debate on these issues is long gone. Now is the time for immediate and bold action.

KEY POLICY INSIGHTS

While India has made considerable progress on access to primary and secondary education, real challenges remain regarding quality and innovation. Access to education is an essential, but not sufficient condition for building India's human capital.

Significant innovation in education is already taking place around the world and in India. The challenge is to encourage, incubate, and most importantly, scale these innovations in the Indian education space. The key pillars of such a policy environment should keep in mind the following:

- *Quality is a moving target; it is essential to create a policy environment that allows regular upgradation of quality*
- *Entrepreneurship in education must be encouraged and incentivised, through early and development stage funding, tax and fiscal incentives, incubation hubs and research labs*
- *The creation of a virtual platform that starts with a comprehensive and ongoing survey of what experiments and innovations are taking place around the world, is an important first step to create a functioning innovation ecosystem*
- *To facilitate innovations, we must clearly define the problems and establish appropriate criteria, which must include measurability of outcomes, cost effectiveness and scalability*
- *For the scaling of innovations, first, the necessary political, human and financial resources must organise behind them to allow this broad scaling; second, technology, should be seen as a key enabler, and essential to this scaling; finally, concerted, coordinated, collective human intervention will allow this scaling to be effective.*
- *Curricula must move from rigid, autocratic, 'top-down' decisions made by isolated policy makers to more democratic, fluid, 'wiki-curricula' shaped by*

- *teachers, students, experts and the broader education community*
  Technology based solutions must be encouraged and the virtual and physical infrastructure needed to allow global players to set up 'Global Education
- *Technology Innovation Network' (GET IN) laboratories*
  GET IN labs would explore curriculum testing through gamification, issues surrounding teachers in their education environment, integration of
- *technology into the classroom, using robots to keep children engaged etc.*
  For most countries that have made education a core pillar of their success, education includes a 'values' framework, that includes culture, art, family, spiritual traditions, and other soft skills that are difficult to define and measure, and yet are the underpinning of the real success of these countries' economies

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CHAPTER THIRTEEN

Scaling Successful Innovations

Amitav Virmani & Shweta Anand Arora

The Katha Lab School in Govindpuri, Delhi is a fascinating example of what students from underprivileged families can achieve when given the right opportunities. It is a space that is buzzing with the sound of students doing meaningful work – creating animations of stories they have read, building 'Swachh Bharat' robots that clean in different ways, running a shadow Parliament debating the Land Acquisition Bill, and working with the Delhi Jal Board to plan pipelines in the nearby water-starved slum. It is no surprise then that alumni from the Katha Lab School are able to secure meaningful employment opportunities, and break cycles of poverty for their families – graduates from the Katha Lab School are now teachers, artists, professional chefs, and even IAS officers!

Although Katha has distilled and scaled a reading program from their experience running this school, the holistic life-enriching experiences offered in the school remain restricted to this island of excellence. What would it take to scale whole-school innovations such as this, so that all students in India can get a meaningful education?

The Indian education sector has several examples of innovative schools - Riverside, Heritage, Shishuvan, Mirambika, and the Krishnamurthy schools are just some examples. Also, meaningful education is not just restricted to the elite – schools run by Katha, Akanksha, Muktangan, Aseema, 3.2.1.,

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and Parikrma are bridging social and economic gaps by giving their students a meaningful education at affordable rates. However, such innovative models are restricted to individual schools. The focus of this article is on scaling successful whole-school innovations so they can be accessed by the vast majority in our country who currently do not have the privilege of educational choice. The article proposes one possible model to attempt scaling a variety of whole-school innovations.

Limitations to scale

There is a combination of factors due to which most of the models listed above are limited in their impact. While some of the factors that restrict scale may be organisational, the focus here is to analyse the systemic factors that limit the extent to which educational innovations typically scale:

1. ***Parallel systems:*** Despite the growing preference for private schooling, the government system continues to be the largest education system in India. However, government schools are not particularly supportive of innovation – there is little autonomy in the hands of those on the ground, and there are no incentives for performance and no mechanisms to record learning.
   As a result, most innovative models cannot feed off existing government networks and have to come up parallel to the government (While in some of the models above, the land and building are provided by the government, there is no other significant contribution from the government, and thus no real partnership). Growth trajectories of these models are painstakingly slow, adding one school at a time. Additionally, their operational structures are then designed to only support a small number of schools.
   To create truly scalable models, it is essential to work with the government school system, as it immediately gives operators a wider reach, a formidable administrative system, and access to existing infrastructure. The marriage of innovation and scale within the Indian education sector can only be in partnership with government schools. However, this would require government to fundamentally re-order their thinking and operations in this sector.

2. ***Resource limitations:*** The organisations mentioned above are largely funded by philanthropic sources, and that poses a fundamental constraint on their ability to scale. Not only does fund-raising take crucial senior management time away from core operational issues, it restricts the number of schools any organisation can run to under a 100. Operational expenses alone for a single school of 300 students would add up to 60 lakhs/annum, in addition to other capital costs like land and building. In addition, limited access to land and buildings for new schools severely constrains growth.

3. ***Multiple stakeholders:*** The smooth functioning of such schools requires many stakeholders to work closely with each other. Buildings often belong to one stakeholder (very often the government in the examples cited here), operational expertise is brought in by the NGO partner, and funding is provided by a completely different set of organisations / individuals. There is no ecosystem-enabler that is looking at the system as a whole, aligning the motivations of the multiple stakeholders involved, identifying issues and constraints, and systematically addressing the same.

4. ***Lack of a common benchmark:*** The absence of a standardized national assessment system makes it difficult to recognise and promote models that are successful. A lot of additional energy and resources are spent in proving whether a model is delivering and in comparing it to outcomes delivered in government schools. Even then, there is debate about the validity of the instruments used for assessment and their suitability in the government context. Many of these issues would be addressed if there were a common assessment that all schools in the country were required to take. This would make evaluation of any new model far simpler, as data on performance would be readily available, and could be compared with multiple benchmarks (government, budget private, elite private, etc.). This would make it easier to identify successful interventions and replicate success factors across different schools.

   While many of the non-state initiatives are limited in their scale due to the factors listed above, the state system suffers from very low quality, which many attribute to a lack of accountability, reflecting in high absence and low levels of effort among government school teachers (Muralidharan and Kremer, 2006).

One Model to Encourage Innovation at Scale

As discussed previously, the government is crucial to achieving scale within education in India. It is therefore essential to consider a model that promotes whole-school partnerships between the government school system and education organisations capable of innovation. This needs to be structured in a way that fosters innovation, accountability, and autonomy within the government system while leveraging the existing system's reach and infrastructure. Mechanisms that assess and track performance in a systematic manner will be necessary to replicate success. Finally, all of this needs to happen under a coherent policy framework, where responsibilities of all the parties are clearly structured and defined.

Based on global experience, we recommend a model for creating *Partnership Schools of Excellence*, which are financed by the government, and managed by the non-profit sector.

Given the large-scale flight to low-cost private schools, there are a large number of under-utilised government schools, which could serve as a starting point for this model. In the top 20 cities alone, an internal analysis of DISE 2013-14 data by The Education Alliance shows that there are over 17,000 schools with a capacity utilisation of less than 40 percent.

A systematic selection process should identify qualified non-profits with the right experience, management, and vision to come in and run these schools. The non-profits should be given operational autonomy in order to foster innovation, but should be held accountable on pre-defined outcomes, including enrolment, attendance, retention, and most importantly, the quality of learning delivered. These should be assessed regularly through third-party evaluations of Partnership Schools, and benchmarked against other government schools.

In order to make this model sustainable in the long-run, it needs to be financed by the government. Therefore, contingent on performance targets being met, the government should reimburse school operators for operational costs. We recommend that this reimbursement be based on a cost-per-child model, and be equivalent to what the government spends in its own schools (a cost-per-child model creates incentives to drive enrolment, and provides budgetary autonomy on spend for school operators). This would ensure quality education without any additional financial burden on the state machinery.

This model provides a route to identify existing whole-school innovations that are successful and take them to scale across the government system, and allows for new innovations to emerge in independently managed schools.

Global Examples

Similar models exist in other countries as well. Charter schools in the U.S. were set up based on a strong community demand for schools that fulfilled the quality promise in a manner that was accessible to all. Today, there are several chains of charter schools delivering quality at scale. KIPP started with two charter schools and now runs 162 schools serving 59,000 students. Across all grades and subjects, most KIPP students outperform the national average. These students come from underprivileged communities where less than 10 percent children, on average, complete four-year degrees. In contrast, 45 percent of KIPP alumni have completed four-year college. Some of the other high-performing charter school networks include Aspire Public Schools, Achievement First, Green Dot Public Schools, Success Academy Charter Schools, Uncommon Schools, and Rocketship Education. On an aggregate level, charter schools have been found to advance the learning gains of their students more than traditional public schools, in reading and math (Center for Research on Education Outcomes, 2013). Students from disadvantaged backgrounds

(black students, students in poverty and English language learners) make higher gains in charter schools than in traditional public schools.

A similar model exists in the UK, with Academies constituting 13 percent of all schools (and more than 50 percent of secondary schools). Machin and Venoit (2011) find that "moving to a more autonomous school structure through academy conversion generates a significant improvement in pupil performance and small significant improvements in the performance of pupils enrolled in neighbouring schools. These results are strongest for the schools that have been academies for longer and for those who experienced the largest increase in their school autonomy."

How this Model Addresses the Scale Challenge

Can this model be taken to scale and widely implemented across India? While scaling any educational model, there is the essential tension between replicating its essential components, while protecting against a one-size-fits-all approach and ensuring there is enough room for contextualisation. Particularly when a model is geographically dispersed, it becomes critical to replicate the core elements that work together to make the model work, while at the same time harnessing and building on local solutions, culture, and talent pools.

This model has the potential to strike that delicate balance. The essential components that are held constant when the model is implemented across geographies include a focus on accountability, innovation, entrepreneurship, and on encouraging dynamic school models that deliver results for students (outcomes based performance). However, this is done in the context of semi-autonomous or networked schools that can fundamentally make choices for what's best for the children they work with. The model releases constraints and allows talented, innovative people to participate in a system of schooling where the ultimate focus is on student learning (Dacia Toll).

A research brief by the National Education Policy Centre (2013) on scaling educational innovations proposes five factors, drawn from an analysis of the literature, as essential to thinking about the issues of scalability. The challenge of scaling any model can be determined by comparing it with the "standard" model of schooling along each of these five factors. The more a model differs from the standard model, the harder it will be to scale.

The analysis below applies this framework to the proposed model, to examine the challenge of implementing this model at scale:

1. ***Cost:*** *What are the costs of the model compared to the standard model (start-up as well as operational)?*

   The model proposes funding Partnership Schools of Excellence at a level that is equivalent to existing government funding, and therefore does not entail additional costs. In fact, with flexibility on budgetary spending, there is the possibility that scaled operators may be able to deliver better outcomes at lower costs than government schools. Research on the Andhra Pradesh school choice project, for example, shows that low-cost private schools using government-funded vouchers deliver similar outcomes to government schools at one-third the average cost per student (Muralidharan and Sundararaman, 2013). In addition, flexibility in teacher pay and performance-based variable incentives could lead to improved outcomes and help drive greater efficiency in the system (Muralidharan and Sundararaman, 2011).

2. ***Human capacity:*** *Does the model demand a much higher level of skill or commitment than is found in the system now?*

   Delivering a superior learning experience is, to a large extent, dependent on having great teachers and school leaders. While some operator models are dependent on hiring exceptional talent in their schools, there are others (detailed in the case studies in the next section) that rely on standardized curriculum, a strong central team and/or technology to deliver quality. This reduces the requirement for exceptional teachers, and makes these models more amenable to scale.

   Additionally, the success of the Partnership Schools model is hinged not just on improving the talent pipeline, but on providing greater autonomy and accountability at the school level, which is likely to lead to improved outcomes. There is evidence that suggests that "local autonomy for school leaders is associated with increased student achievement, as well as reduced student repetition and failure rates" (Baum, et al,

2014). Higher levels of accountability have also been found to be positively related with higher levels of student performance.

3. ***Tools and infrastructure:*** *What specific support does the model require? (facilities, technology, training materials, etc.)*
   A big advantage of the model is that it can leverage existing government infrastructure that is currently under-utilised, thereby driving efficiency in the use of public resources, and minimizing any additional infrastructural burden.

   Scale models such as the ones referred above do require central support such as a standardized curriculum and common teacher training. We have the advantage in this context of having some proven models already, which can scale further with the introduction of the Partnership Schools model, thereby leveraging material and resources that have already been developed (with some degree of contextualisation).

4. ***Political support:*** *Is the model likely to have ongoing support from elected leaders and senior members of bureaucracy, as well as from teachers, students and parents?*
   This factor is likely to be the biggest challenge to scaling the Partnership Schools model. Although there is a teacher shortage in the country overall, an initiative like this may be viewed by teacher unions as displacing their jobs, and introducing the threat of greater performance pressure on them over time. It is likely to be successful only with the buy-in and push from the senior-most political and bureaucratic leaders in a state, and with constant proactive communication on the long-term benefits of such a model. With time, as evidence is generated on the impact of the model, political acceptability may increase and expanding it to new geographies may get easier.

5. ***Non-school factors:*** *Additional factors such as the student demographic served, parental commitment required, resources required at home, etc.*
   The presence of sufficient operators that can deliver quality at scale could pose a challenge. However, this is mitigated by the fact that there are already some proven at-scale operators who can be brought in to participate in this initiative (this is elaborated in the next section). Experience from the West also shows that policy frameworks that work for all relevant players encourage several new entrants into the sector over time.

   Overall, with political buy-in, the model should be relatively amenable to scale given its comparable/lower cost than government schools, existence of approaches that do not rely on exceptional talent, and utilisation of existing infrastructure.

Accelerating Successful Models

While this proposed model is new in India, we have the unique advantage of not having to start from scratch. Unlike in the US and UK, where it has taken several years for quality scale operators to emerge, we have the opportunity to bring in proven models that have the ability to work at scale. Two case studies are illustrated here as examples [1].

Gyan Shala: Gyan Shala provides low-cost education through a network of mostly single room centres that serve as classrooms for students from local neighbourhoods. Gyan Shala is keen to move to a stand-alone school model with grades 1 – 10. Beginning with a mere 10 classrooms in 2001, Gyan Shala had grown to around 1600 classrooms in 2014-15, impacting over 42,000 students every year. The organisation has scaled up from its original location in Ahmedabad, Gujarat to the states of Bihar, Uttar Pradesh, and West Bengal. They are currently introducing their academic program package in 7300 government schools in four districts of Bihar and likely to cover around 1000 government schools in Uttar Pradesh.

Evaluations (including Prof. L Linden's MIT Study, EI Assessment, and CfBT Assessment) indicate that Gyan Shala students have shown 60-100 percent higher learning gains than their government school counterparts – on par with the average in some of India's elite schools. Additionally, students taught by the Gyan Shala approach in Ahmedabad Municipal Corporation schools perform better than the other students at Ahmedabad Municipal Corporation schools. This is particularly striking considering the low cost of Gyan Shala schools, which is less than a quarter of the cost of government schools. Gyan Shala's business model is extremely low cost, with total cost of education – including the cost of learning material, teacher salaries and training, and school rental per students – estimated at a mere Rs. 3000/- ($ 60) per annum.

Gyan Shala's education delivery model is based on a highly standardized approach, which is broken down into units and day-to-day lesson plans. The day-to-day education is supported by a design and management team that creates curriculum, takes feedback from teachers on a weekly basis, and trains teachers through demonstration. It is interesting to note that the crux of the Gyan Shala model is the strategy of using less educated staff while helping them with a highly qualified design and support team.

Low cost, standardized education delivery and proven results make Gyan Shala an excellent partner to take to scale.

[1] *These case studies are built using data that is publicly available or provided by the operators themselves. They are not based on the authors' research or personal experience.*

Bridge International Academies: Bridge International Academies runs a chain of primary and pre-primary schools in developing countries (currently Kenya and Uganda, Nigeria and India entries are being planned), bringing quality education to families living below the international $2-a-day poverty line. Bridge owns the full delivery system of education – from curriculum development to teacher selection and training – with a keen eye on data analysis and evaluation. This model is particularly well suited for scaling quality.

Bridge has subjected itself to continuous and comprehensive evaluation. For instance, it conducted an evaluation to test the learning outcomes in its schools vis-à-vis public schools in Kenya (2013). Compared to public schools, Bridge pupils gained an additional .32 standard deviations on reading fluency, which translates to around 252 additional days of learning. In mathematics, the Bridge effect translated into almost 288 additional days of learning. These effects are of significant magnitude, even when compared to other interventions in the education sector. Such external evaluations are done annually at Bridge. Additionally, Bridge has launched a rigorous, independent impact evaluation of their programme in Kenya, the first large-scale randomized trial of fee-paying schools in sub-Saharan Africa.

Particularly impressive is Bridge's ability to provide quality education at scale. In 2014, Bridge opened 146 new academies in Kenya, bringing it to a total of 359 in the country. Learning gains have persisted with this expansion. Bridge's focus on technology, data analysis, and on-going improvement makes it a good example of a model that can be accelerated quickly without compromising on quality education.

Both the models above have demonstrated their ability to deliver quality at scale. In addition to these, there are other operators too that have the ability to work at scale, such as the Bharti Foundation, but which haven't yet published systematic impact evidence on learning level outcomes at the same level as Bridge and Gyan Shala. Bringing such operators under the policy framework for Partnership Schools of Excellence can dramatically accelerate the speed at which these models scale further, build evidence to guide further expansion, and ensure they benefit students from disadvantaged backgrounds by strengthening the government school system.

Applying the approach exemplified by Gyan Shala and Bridge in the Partnership Schools context is particularly appropriate for the Indian context. A McKinsey study (2010) examined some of the world's most improved school systems that registered significant, sustained and widespread student outcome gains, and unravelled the intervention clusters that seem to be most effective for systems at different stages of the performance spectrum. Based on our performance on assessments such as PISA and ASER, India falls right at the beginning of the spectrum, and needs to move from Poor to Fair (the primary focus in this stage of the journey needs to be on achieving the basics of literacy and numeracy).

According to the report, the interventions that are most effective for this stage include the following:

- ***Motivation and scaffolding for low skill teachers*** – These are provided in the Gyan Shala and Bridge examples through scripted teaching materials, central support, coaching, and close monitoring
- ***Getting all schools to a minimum quality level*** – Performance-based reimbursement in the proposed model enhances accountability and helps drive minimum quality levels
- ***Getting students in seats*** – While India has met primary enrolment targets, improving the quality of government schools can improve retention and reduce dropouts

Limitations

Despite the promise of this model, there are challenges in implementing this in India. For one, the partnership model hasn't been tested here, and we do not have India-specific data to assess whether it will work. There is the threat of the initiative being viewed as 'privatisation' and of opposition from teacher unions, and it is therefore essential to have strong political backing and clear communication on the model, its objectives, and its promise to lift educational quality.

To counter these fears, it may be beneficial to facilitate a pilot project that tests the model and highlights improved learning outcomes from Partnership Schools. Following a rigorous and transparent selection mechanism is also critical to ensure that mission-aligned organisations that have the ability to deliver on the model's promise are the ones that get selected to run schools.

Like most other initiatives in education, the model is likely to take time to demonstrate results. The US and UK experience also demonstrate that the performance of this sector has improved over time. In the US in particular, part of the improvement is attributable to more proactive monitoring and closure of underperforming schools. Learning from global experience, it is important to have the patience to support the model for a minimum of ten years to see meaningful impact. However, this need not apply to individual operators, where a more stringent approach needs to be taken to ongoing evaluation – closing schools that fail to deliver.

Despite these challenges, the Partnership Schools of Excellence model has the potential to take existing whole-school innovations to scale, accelerate already-scaled models, and offer educational quality and choice to economically weaker sections of Indian society. In the long run, this initiative could also help impact non-partnership schools by replicating

approaches developed in the Partnership Schools. This could be done through codification of these approaches, coupled with systematic mentoring relationships and teacher and leader professional development. The overall impact of the initiative could therefore go far beyond the schools directly operated under this model.

Other Ways of Scaling Innovations

The model proposed here is just one way of scaling innovations, particularly from non-state actors, and through the government school system. There are, of course, other models that the government can consider to replicate innovative and successful practices across the system.

One approach could be to set up centres of innovation or lab schools within the government system, which are digitally connected with other schools and can transfer practices and learning, particularly to remote and hard-to-reach areas. Another could be to examine current government schools to identify high-performers (such as the Kendriya Vidyalayas), study them closely to identify the practices that are driving performance in these schools, and then create channels to replicate them. This replication could be driven either through the setting up of similar models in states, or by using the high-performing schools as training and development centres that work with other schools to raise quality.

For any of these models to be successful, it will be important to combine their implementation with measures that improve accountability in the government system, and shift the focus from input-driven metrics to learning outcome-linked ones. For this to happen, the first and most critical step is regular monitoring of academic outcomes through standardized learning assessments of students (this would also enable impact assessments of multiple educational programmes to use a common set of benchmarks for evaluation, thus enabling comparisons across programmes and helping in the identification of the most successful models). Additional steps to shift the focus from inputs to outcomes involve using these assessments to track performance of teachers, schools and block officers, and a re-alignment of performance management systems throughout the system to build a relentless focus on learning-driven metrics. Eventually, any innovation can be scaled successfully only if the system builds the right incentives for its replication.

KEY POLICY INSIGHTS

- *There is unlikely to be a silver bullet that addresses the challenge of providing high quality education to all to improve learning outcomes. It is critical to pilot and evaluate multiple approaches, some of which are likely to succeed and others will fail.*
- *The Indian education sector has several examples of innovative models of delivering high-quality education. However, these innovations are limited in their scope, often restricted to individual schools.*
- *To facilitate the scaling-up of successful experiments, several challenges that restrict expansion need to be addressed. These include: parallel education systems and limited government support for innovations, limited resources, multiple stakeholders and interest groups, and the absence of a common benchmark*
- *While conducting experiments and testing innovations, it is important for public and non-state actors to collaborate, and leverage the strengths of both, rather than making the debate one of public versus private. While the government has the scale and brings deeper pockets, the private sector is often more efficient, nimble and able to innovate. Funding from corporate and individual philanthropy can also bolster the resources of the government.*
- *It is therefore important that in solving the education crisis, the government be open to developing solutions and at-scale models in partnership with innovative non-state players (whose current scale may be constrained due to running as a parallel system or limited financial resources).*
- *It is also recommended that the government establish innovation hubs that are constantly piloting new interventions, identifying successful ones, and building mechanisms for transferring knowledge from these to the rest of the system.*
- *For any attempts at replicating innovation in the government system to be successful, they need to be supported by changes in accountability systems and a shift to a data-driven approach with a laser-focus on learning outcomes.*

CHAPTER FOURTEEN

Transforming Pedagogy at Scale: A Case Study of the Sampark Smart Class Program

Venkatesh Malur

A student in class 2 is counting at the top of her voice and the entire class is joining her in a chorus. The other students are eagerly awaiting their turns to count using the number line. The chuckles and the enthusiasm is almost infectious, contrary to the conventional picture of a classroom where students almost mechanically copy from blackboards. There is an air of competitiveness, appreciation, and inquisitiveness among students. This is the story of a school located in Rajnandgaon district in Chhattisgarh. This makes one wonder if learning outcomes could be improved considerably by incorporating small yet effective changes. Is it possible that we can make the learning process interactive and fun for both teachers and students? How can we enhance the capabilities of our existing resources? To what degree can we innovate and how could we ensure that the innovation leaves an impact on not just a few but millions of children? How can we minimize the cost in order to have an effective reach all over India?

The Sampark Smart Class Program

It is in this context that Sampark has treaded to achieve the *"Transforming Schools at Scale through Sampark Smart Class Program."* The core of this initiative is the improvement of learning outcomes, using pedagogy that arouses curiosity by being more engaging, fun, and visually interactive. In line with this philosophy, Sampark launched a 3-year-long research project to bring together frugal and innovative practices, experiences, and knowledge in the primary education

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domain, and subsequently, developed a unique Sampark Pedagogy Framework (SPF) that helps in creating the maximum impact at lowest possible cost for over 2.8 million children studying in 46,000 primary schools in India.

Sampark Foundation has signed a Memorandum of Understanding (MoU) with the governments of Chhattisgarh and Uttarakhand for the program's implementation and sustenance at scale. In this unique arrangement, there is no financial transaction between the State Government and Sampark Foundation. The state provides financial support for the training of teachers, school monitoring, and utilizes its field personnel to participate in this innovative program. Sampark Foundation, on the other hand, provides the pedagogy (Teaching Learning Materials, Teacher Reference Calendar, Continuous Assessment, Teacher Training and onsite support, and ICT Monitoring Platform) for the effective implementation of the program. In this unique partnership, the Smart Class Program is an endeavor to integrate an innovation-based approach within a government system and implement at scale. The quest has led us to the following three insights:

- More inputs do not necessarily translate into better quality in terms of outcomes in learning. Learning outcomes in India continue to be poor despite more inputs - hence the demand for a new approach is growing.
- There is need to prioritize frugal innovations in classroom transactions and work in sync with the existing system that will leverage the existing teachers, systems and infrastructure. Delivered in a fun and simple way, pedagogy needs to increase curiosity and needs to be applicable in daily life.
- In order to scale up via organic diffusion, standardization and community involvement is important and it is possible to achieve scale with innovation and ensuring quality.

Designing the Basic Model

Pedagogy

At the core of our design is an assumption that if we can get a child excited about learning, nothing will stop her from getting to where she wants to go, irrespective of all the constraints she might face on the way. We also believe that the enthusiasm of a child to learn and imbibe is contagious and will energize the dormant system to rise from its stupor and jump in that energy pool of enthusiasm for learning. We were curious to know how learning outcomes could be impacted had the Indian education system – despite its complexity – found simple ways of creating at least some minimum semblance of excitement in classroom transactions. Our research has revealed that a child's enthusiasm towards learning can be enhanced with intervention on these axes.

- ***Show me:*** Visually attractive teaching learning materials that bring back the excitement of going into a classroom. The teacher faces the children and plays with colorful teaching learning materials (TLM) to teach concepts.
- ***Play with me:*** Games can be the best way towards learning. By converting all concepts into innovative games, learning is fun again and the energy level in the classroom is suddenly high.
- ***Tell me a story:*** Storytelling can be an effective tool to engage with children and local folk stories if incorporated in the class curriculum can yield better outcomes.
- ***Teaching Aid for the teacher*** in the form of a Reference Calendar is provided which supports the teacher in the classroom transaction to deliver the concepts in a systematic manner.
- ***Progress Mapping of Children*** after every concept is undertaken and displayed in the Progress Chart making it visible to teachers, students and academic support persons thus making it easier to understand the achievement in the classroom.
- ***Teachers are trained hands on using the interactive activity based pedagogy*** and understand the process to be adopted in the classroom in a way that children participate and enjoy the process of learning.
- ***For reinforcement of learning and process of teaching learning*** animated videos are made available to all teachers through social media and regularly updated. This creates a community of practitioners who are sharing and learning together.

Methodology

The core of our signature Pedagogy is the colorful "Smart Class Kit" - a classroom TLM that transforms the curriculum for each class into a sequence of concrete and manageable learning units. Students move through a continuum of activities, stories and games, which consists of 5 processes: learning a concept, applying it in multiple ways, evaluation of what is learned, enrichment, and remedial exercises. Children are active learners who master concepts by progressing through three levels of knowledge-concrete, pictorial, and abstract. The use of manipulatives enables students to explore concepts at first in the concrete level of understanding and then progress to their representation on paper or the pictorial level. Over time, they will devise strategies and apply algorithms to solve problems when only the expression is given, thus reaching the abstract level.

Scaling the Model

The model had been created with the capacity to scale organically, with the active participation of the state government. It was crucial to devise an arrangement wherein existing government personnel and infrastructure could be utilized effectively to reach out to and support the teachers

and students. The Smart Class Program has been initiated in 2015 across 4,600 government primary schools in Uttarakhand and Chhattisgarh. The initiative attempts to demonstrate the process of improving learning outcomes in Mathematics for the early grades at scale across government schools. The program in 2014 was demonstrated in around 375 schools reaching out to 30,000 students and around 500 teachers.

Ensuring quality at scale

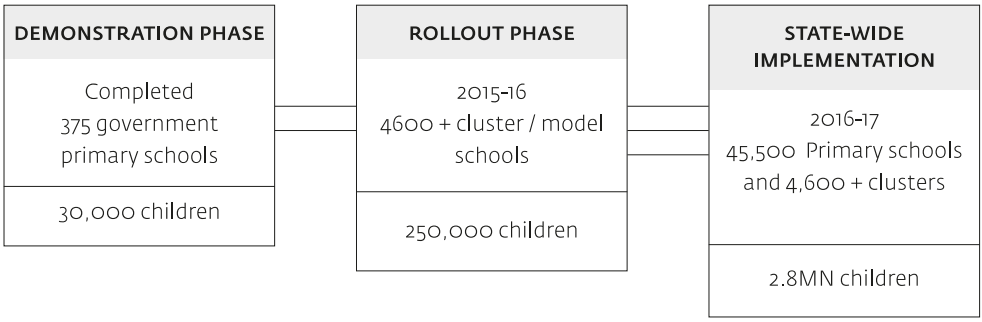
To ensure that the program ensured quality even though it was being provided on a large-scale, the program implementation included the following elements:

- ***Training of trainers and teachers:*** the training in its own way is distinctively unique and interactive as the teachers get a perception of how to deliver each concept using the manipulatives in the classroom through activities, games and stories. We have successfully trained around 5,000 teachers of government schools.
- ***Smart Class:*** The breakthrough idea emerged from observing Spastic children with short spans of attention learn mathematics using colorful material. Inspired by that idea, colourful TLM has been designed and introduced for each concept, through stories and games in the classroom. Children are able to see patterns and make connections between concepts in mathematics as well as in other subjects, and are able to solve unstructured problems from real life by application of mathematics. The pedagogy covers all topics of primary math curriculum. The concepts are grouped in four broad areas: numbers and operations; geometry; measurements; as well as patterns, data handling and problem solving. The TLM is used to teach multiple concepts to assist children in associative learning across grade levels.
- ***Diagnostic Testing of Outcomes:*** During the rollout in 2014 we have carried out a diagnostic test prior to the initiation of the program and after the end of the school year in April 2015. The analysis reveals that after using the Sampark Smart Class Kit, there is a significant increase in the percentage of students who attempted all the questions and performed well in the post-session test. This clearly illustrates that 'gamification' of teaching methodology using the Teaching Learning Materials entwined with stories and activities brings improvement in the learning levels of the children.
- ***Monitoring and Onsite Support:*** Using the existing education infrastructure and personnel, the program incorporates regular monitoring of schools by nodal persons. In addition, onsite support is also made available to teachers. Demonstration classes are conducted at the cluster level every month to support the teacher to make their plans and execute them in the classroom.
- ***Teacher support:*** Every teacher is provided a reference calendar with lesson plans and animated videos on concepts thus creating a pool of resources; using which the classroom transaction is made interactive and exciting for children. The calendar also

includes ideas for games, formative assessments and areas that need focus. An introductory hands-on training for teachers covering the entire early grade math concepts introduces teachers to the philosophy, methodology and the use of TLM.

Planning for future scaling

Sampark's scale-up program follows the *waterfall model*. We started with our demonstration phase in 2014 in 375 schools and have strategically planned our step-wise initiatives in rollout phase to reach out to 4,600 schools. In the next four years of the state-wide implementation phase, we will be implementing the program in 46,000 schools. Sampark has its core resource persons and program officers in each state for the effective implementation of its projects. We also have a cadre of Master Resource Persons who further train the primary school teachers to ensure high quality content delivery to the students.



Having a mission of bringing change on a huge scale, Sampark is using ICT tools for timely implementation, monitoring and evaluation of the program. Sampark is designing a monitoring platform to track the overall implementation and effectiveness of the program regularly, and we hope that this will also help in keeping checks and balances at each level and phase of the program.

KEY POLICY INSIGHTS

Through Sampark's experience devising a new pedagogic model, and subsequently working with the state apparatus to make it available to a large number of schools, the following lessons emerge for the successful design and scaling-up of programs centered on improving learning outcomes:

- ***Design to scale:*** *Sampark's program started out as one with an intention to be scaled. Consequently, the most cost-effective and efficient program was designed based on thorough research and examination of existing practices and knowledge.*
- ***Frugal Innovation is key:*** *The Smart Class Kit designed by Sampark costs USD 1 per child per year; thereby making it replicable at scale in the Indian context within the available budgetary frameworks.*

  Design programs that improve pedagogy: *Sampark devised new teaching learning methodologies that adopt an interactive 'Show me – Tell me – Play with me' approach, which helps the child in learning concepts in an easier manner.*
- ***Focus on improving learning outcomes:*** *Teachers are teaching in the classroom using the pedagogy which has improved the participation of children and leading to better retention of concepts, and an eventual improvement of learning outcomes. Teachers are thereby able to show success and are ably supported by the academic resource persons. Partnerships then can be forged without financial transactions but with a focus improving learning levels.*
- ***Keep checks and balances:*** *measure the effectiveness of programs through a continuous monitoring and diagnostic testing of learning outcomes*
- ***Provide training, re-training, and continuous support to teachers:*** *Teachers were supported and trained to develop plans and implement them in the classroom*
- ***Work with the existing system:*** *Keeping in mind the large scale of the program, Sampark Foundation's approach is to work hand-in-hand with the existing System – i.e. Education Officials, teacher educators and teachers themselves. n addition, long-term relationship building is crucial, as education is a field where change comes gradually and takes time to become visible*
- ***Create an Enabling Environment:*** *Sampark has endeavored to partner with the states in a unique arrangement with no financial transaction but ample knowledge transaction that is strengthening and capacitating the existing institutional framework of Education. Such partnerships need to be promoted, which will bring in technical and financial support to the states in a transparent manner and with an orientation to achieve results.*

CHAPTER FIFTEEN

Improving School Quality at Scale: A Case Study of Ark's School Quality Assurance Framework

Kruti Bharucha & Ian Anderson

Introduction

Improving access for all to quality schooling is the great challenge of today's education system. Quality for a few, or quality for the next generation, is not enough; change must be accelerated rapidly if the challenge is to be met. This kind of systemic change requires government involvement, either as a provider or as a regulator of quality; yet rapid, flexible change is not always associated with public education systems. In this context, the critical question facing policymakers, funders and service providers is how to innovate and accelerate in partnership with governments. This is the question this chapter seeks to address.

For the last three years, Ark has worked with the Government of Madhya Pradesh, through a Department for International Development (DFID) funded accountable grant, to develop a School Quality Assessment framework for use with the entire state system of over 120,000 public schools. Drawing on lessons from international best practice, we developed an assessment model aiming to meet three critical accountability parameters of providing information, enabling self-improvement, and structuring support – while avoiding a high stakes approach that might distort behaviour. It is currently being rolled out to 20,000 schools, and aims to reach the entire state by 2017.

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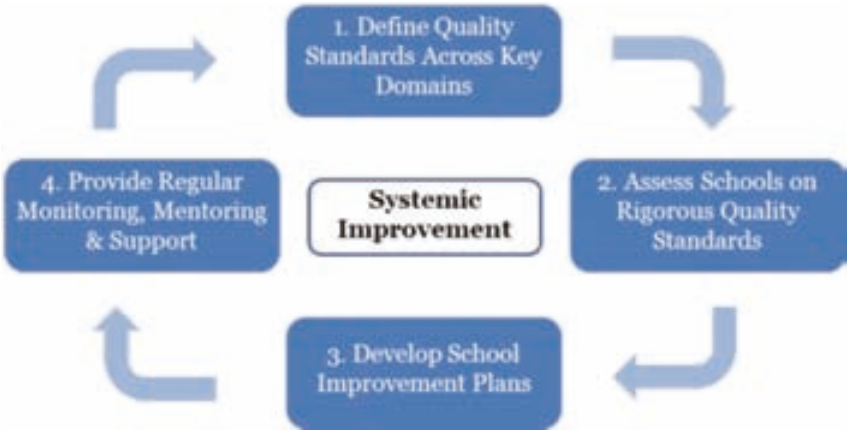
Designing this kind of acceleration is the focus of this chapter. It uses Ark's work as a lens through which to set out some pragmatic examples of how rapid change can be made possible in public school systems.

The chapter starts with a brief look at the need for innovative, scalable solutions for monitoring school quality in public education systems – and the difficulty of designing them. It then sets out at a practical approach to solving this policy problem through a three-stage framework: encouraging innovation; designing for scale; and finally managing acceleration of delivery.

Designing a Quality Assessment Model

A major contributing factor to the poor quality of education in many countries is the lack of effective governance, and particularly the absence of robust accountability structures. Ark's experience from the UK suggests that besides strong governance, the ability of a system to self-improve is dependent on regular feedback and technical support. An effective assessment system has the potential to tackle both challenges, enabling the state to offer closer accountability and more informed support to schools.

The system developed for the government of Madhya Pradesh uses a cycle of needs



assessment, planning, and follow-up support to schools, as shown in the diagram alongside. Following a review of national and international best practices, a quality framework was established comprising 7 quality indicators – focused to include only those indicators over which a school has direct control of its own performance. A range of associated quality standards are then determined within each indicator; these standards form the basis of the school assessment tool.

With the tool defined, each school assessment round involves an inspection by two assessors, integrated with data on the learning outcomes of the school's students, taken from the standardised annual state-wide test, Pratibha Parv. In Madhya Pradesh it was decided to use two assessors to undertake the SQA process: one from within the state and one external. (There are broadly three alternatives: besides the chosen "mixed" option, it would also be possible to implement true 3rd party evaluations by using assessors are external to both the schools and the education department; or to focus on self-evaluation, where the assessment is carried out by the school's own staff with informal support from state education officers). Based on the schools' assessment performance, a report is generated, which outlines the schools strengths and weaknesses, and forms the basis of a School Improvement Plan.

Finally, the local Education Department teams provide support, monitoring and mentoring once every quarter to help schools achieve the targets and deliverables in the Plan. The pilot emphasized the need for this level of regular monitoring, without which schools are not adequately supported to achieve their targets; these follow up visits are also important for building the state's capacity to provide schools with the necessary academic inputs to improve quality. As the education system gradually improves over time, it becomes possible to re-define the quality standards against an ever-higher bar for continuous improvement.

Scaling Quality Assessment: Challenges

The system described above is not complex or conceptually ground-breaking. Yet despite the need for stronger accountability and self-improvement frameworks in public school systems, and despite the relative simplicity of designing a conceptual framework to address this need, almost all existing school assessment frameworks in developing countries such as India are designed for the private sector. Partly as a result, they offer high-touch, detailed evaluations that focus on simply rating or accrediting a school, rather than on enabling self-improvement; they also work with a relatively small number of clients.

In part this is because the practical and political challenges are much harder than the conceptual ones. Designing and implementing such a framework for an entire state faces three major hurdles.

First, it has to be implemented within the limits of existing public capacity; in this case, the ability of local officials to inspect and advise. Second it has to enable flows of real-time, actionable information in a context where data collection is traditionally a slow, bureaucratic process. Finally, to be adopted widely it needs buy-in from a complex set of stakeholders.

Accelerating change requires a solution, and a process, that recognises and solves for these challenges. The following sections set out one approach by which this can be done.

Continuous Innovating

Stage one of the innovation framework focuses on the development of the core concept. The first objective here is to ensure there is sufficient talent and experience around the table. The School Quality Assurance (SQA) programme in Madhya Pradesh has its origins in a consortium of three partners – CfBT, M-CRIL and Ark – all of whom brought different skill-sets and perspectives from school management, school inspection and organisational rating to inform the final design. A single owner of the process remains critical, however: whether it is a unit in government or an external agency, an incubating entity with skin in the game is necessary to drive the product from design to scale.

The next component of the innovation stage is probably the most important. The first tool designed will not be the one accelerated to scale. Yet a long process of repeated piloting and evaluation can exhaust political will and even the most patient funders, so a rapid prototyping approach is absolutely essential. The innovators must always be flexible and willing to course-correct rapidly. In Madhya Pradesh, the SQA design went through four phases of development in a little under a year, each time piloting in around 25 schools before regrouping to improve the model. A key evolution was in the scale and complexity of the tool, as the team rapidly discovered that their original "premium" design was too complex for operating in the contexts, and with the resources, available. Only by the fourth iteration was the framework ready to roll-out at a state level – and even then, a large pilot involving 2,000 schools was conducted in four months to test the practicalities of operating at scale with the state machinery.

"We launched the School Quality Assurance (SQA) programme in 2012 to redefine quality standards for K-12 education in our state – a first-of-its-kind initiative in India. For the Government of Madhya Pradesh, the real value of the tool is in empowering School Principals to 'own' their schools' development, helping them to prepare action plans that will create a sustainable path for continuous improvement. In addition to this school development approach, we have used technology to allow for tracking of a school's progress and analysis at the district, block and cluster levels."

"We have put in constant effort to ensure that this programme is cost-effective and scalable. The Ark-led consortium has helped ensure that the framework is being understood and implemented at every layer of administration so that the Government can continue the implementation and follow-up measures. We have made huge strides in building a culture of quality in MP and that is certainly a huge step forward for school education in India."

- *Commissioner, Sarva Shiksha Abhiyan, Madhya Pradesh*

This prompts a final question at this stage around funding innovation. How are such consortia assembled, and how is the resulting product brought to scale? A fail-fast mentality needs to be backed up by funding security, and once a product is confirmed, initial scale-up requires support for capacity building. Governments on scarce budgets may require a longer and more expensive proof of concept process than a donor or innovator before they can be convinced to assign significant public funds or new legislation to a project. The SQA project was fortunate to benefit from a grant of about £400k from DFID for its initial two-year development phase, followed by a further £415k from Ark and DFID combined to enable eighteen months of scale-up and a thorough handover to the government: not an expensive investment in the context of the scale of the initiative, but a long-term one requiring patient capital.

Designing for Scale

The second stage of our innovation framework involves designing for scale, right from the outset of a project. We believe there are three principles behind this idea, exemplified by the development of SQA Framework in Madhya Pradesh.

First, ***focus on the essentials of the problem.*** The more complex the solution, the more difficult it is likely to be to get to scale. In the SQA case, this involved investing time with the government agreeing on a very clear and limited brief for the project. The framework would tackle the gap in the market for a public school assessment tool, putting aside the complexity of trying to address the private sector simultaneously; it would be easy to use and easy to act on. We then kept this brief central to the project: for example, over the course of the initial design year we dramatically simplified the assessment tool, halving the number of reference points to ensure it would be usable and actionable.

Second, ***focus on what is available***: remember that scale has to be achieved with the budget, skills and resources that will be available on a sustainable, long-term basis. This meant we needed to keep the tool low-cost: our benchmark was the UK's inspection system, which costs around 1% of the budget of a UK primary school; the SQA framework in MP costs 0.6% of the budget of a typical local primary school and the entire state roll-out, over six years and to 120,000 schools, will cost a little over £8m. It also meant we needed a product that can be delivered with existing public sector capacity, rather than being dependent on a major skills upgrade. The tool design therefore minimises subjective and complex judgement, aggregating a large number of objective, often binary, questions to produce a balanced scorecard. The follow-up system is clearly structured and signposted. And only actions that are within the remit and capacity of the school–such as pedagogy and child welfare, rather than infrastructure investment or curriculum design – are included in the simple, actionable school improvement plan.

Finally, ***stakeholder buy-in is critical.*** Senior leaders will take the make-or-break decisions to allocate budget and political capital to accelerate a project. Quick wins are important to generate their excitement, even in a project which will take a year or more to drive real impact at school level, and three or four years before scaling across the state. Ideally, such quick wins are hands-on, visual, and actionable: generating enthusiasm and making the project real. The Android App developed to simplify data collection had a major spin-off benefit in this respect, as senior government figures could use the app to see what was happening in their schools. The clear analytics of the data dashboard provided a tangible, usable output from early in the project: even when very little data had been uploaded, officials could start to visualise the potential of the new system rather than accepting it on trust.

Accelerating

Once the project has a scalable design, accelerating to scale is the third stage in the innovation framework.

For the SQA project, a critical success factor at this stage was the level of government ownership we had built into the project from the beginning of the design phase. Throughout the process, it was made clear that this was a government innovation with the core strategy of a focus on self-improvement, not high-stakes accountability, being largely driven by government needs and priorities. After each mini-pilot iteration, the team shared with the government the findings and any planned changes, so that officials were kept in the loop throughout.

As noted above, the product was designed to fit into existing bureaucratic structures rather than creating too many new layers or teams. Consequently, scale-up simply required political direction, rather than major reorganisation. And the detailed process of project management was also designed around the government, integrating the initiative into existing parameters to make acceleration to scale as easy as possible. For example, the timeframe for scale-up was designed to fit around annual financial cycles; the funding requirements were scoped to fit within more easily approved budget limits.

However, accelerating quickly – especially from a rapid process of innovation – carries long-term risks without a properly robust evaluation at scale being conducted as soon as possible. Eventually, lack of evidence can hamper further acceleration because the reform lacks credibility; it can even end up going backwards, with no clear data to answer any doubters. Since good evaluation requires time – perhaps at least one or two years for any school-level innovation – a full evaluation of a large-scale pilot needs to be implemented as quickly as possible, and potentially in parallel with the first stages of fully rolling-out the reform – returning to the principle that accelerated change needs to be flexible and course-correcting.

In this context, Ark worked with the government to set up the roll-out in a way conducive to a large-scale randomised control trial. Over a two-year period, as the roll-out progresses across the state, schools that are assessed will be compared against those that are not in terms of student outcomes and in terms of process. Within a relatively short timeframe, the programme will have impressively robust data with which to understand its impact, and improve further as necessary.

Ark's SQA Framework: Next steps

Any innovation is an ongoing process. Even when a policy solution is accelerating to scale in one geography, its shape is seldom fixed or final: ongoing evaluation and improvement remains important in order to take the idea to the next opportunity.

In the case of the SQA framework, this is taking two forms. Firstly, the scale-up process has prompted a number of design questions which will lead to the development of "SQA 2.0". These include the need to integrate the framework with a set of robust, perhaps bespoke standardized student assessments, so that the student outcome judgements involved are reliable and consistent; the need to amend some of the core processes, including the approach to classroom observations; then need to review the balance between accountability and school improvement, perhaps publishing schools' performance or creating reward systems for top performers; and the need to enable direct feedback to parents in a way that facilitates school choice and community accountability.

Second, a number of governments are interested in exploring whether the SQA model can be adapted to the Early Childhood Education (ECE) space. This will require a whole new iteration of the framework, bringing new innovation partners to the table and rethinking the design for scale to take account of the new context: incorporating infrastructure assessments, understanding nutrition and health judgements, and working with early year's educators rather than teachers. While the challenge is different, it is likely that the approach to innovation and acceleration will be the same.

KEY POLICY INSIGHTS

This chapter has presented a three-stage model of innovation through the lens of the Ark SQA project in Madhya Pradesh. Based on this discussion, the following emerge as the key components of an innovation that is designed to address quality concerns, while simultaneously being scalable:

- *An effective assessment system is able to provide regular feedback and technical support, enabling the state to offer closer accountability and more informed support to schools*
- *Base assessments on measurable indicators of quality, focussing on those factors that schools are able to manage to improve quality*
- *Provide continuous support, monitoring and mentoring to help schools achieve targets and deliverables*
- *Encourage innovation:*
  - *Promote or enable collaboration, as small, cheap innovation teams don't have all the expertise necessary in-house;*
  - *Provide funding security and be willing to include follow-on funding for scale;*
  - *Enable rapid prototyping, always being flexible and willing to course-correct rapidly.*
- *Design a product that can scale:*
  - *Focus on the essentials of the problem you are trying to answer,*
  - *Focus on the resources and the context you have, not the ones you might want; Generate immediate wins to generate buzz among decision-makers, if the impact is long-term.*
  - *To deliver the necessary acceleration, build in government ownership as early as possible, and leverage existing government infrastructure*
- *Create a robust evaluation mechanism, so that strong evidence is generated to analyse impact, generate insights for future improvements, and maintain momentum.*

CHAPTER SIXTEEN

E-nabling Accelerated Access to Quality Education: Leveraging the Technology Opportunity

Subir Gokarn & Rohan Sandhu

Introduction

For the authors of *A New Face of Education: Bringing Technology into the Classroom in the Developing World*, the case for incorporating technology into education policy, stems from its ability to address the various infrastructural gaps that prevent developing countries from achieving universal primary and secondary education. If deployed effectively, they write, technology can be used to address all the common shortfalls in education in developing countries, as highlighted by the "Education for All" framework of the Global Compact on Education: access to learning opportunities; mastery of foundational skills, including learning how to learn and analytic skills; and the relevance of learning content to full participation in the economies and governing structures of today's world.

Realizing the role of technology and innovation as an engine for socioeconomic growth and development, the Government of India declared the 2010-decade as the 'Decade for Innovation,' and established the National Innovation Council (NInC) to evaluate and design an innovation strategy for the country. Over the past year, technology in education has received a major impetus, with Prime Minister Narendra Modi continually emphasising his commitment to digitalise education – among other social sectors – viewing

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technology as a means to improve access to quality learning. This is consistent with the government's pronouncements about making schools e-enabled, rolling out broadband highways, and preparing children for a knowledge society, as well as budget allocations towards virtual classrooms and online courses.

While digitalising education is clearly a goal, the challenge for the government now is determining how this will be realised, while fully understanding the scope of technology in transforming the education sector. There are three broad sets of challenges we must contend with: putting in place the required technological infrastructure, developing a market for educational innovations, and identifying the goals and objectives of technology in this sector.

Access Issues

The World Economic Forum's Networked Readiness Index (NRI) portends some of the obstacles pertaining to the expansion of technology and communication infrastructure, broadband development, and the growth and development of IT-enabled industries. Per the index, which measures a country's ability to exploit opportunities offered by Information and Communication Technologies (ICTs), India is currently ranked 83rd among 148 countries, falling 15 places from its 2013 position. A disaggregation of the index points to India's political, regulatory, and business environment; the lack of digital infrastructure and shortfall in electricity production; and low individual usage of technology, as the most significant impediments to its networked readiness. India also ranks near the bottom for its business and innovation environment, the enforcement of contracts, and the procedure and time to start a business, owing to a bureaucratic apparatus characterized by red tape and high corporate tax rates As a consequence, India has been unable to take advantage of its low mobile phone, broadband, and landline tariffs, its competitive local markets, and access to venture capital.

In the education space in particular, the ability to exploit the advantages of ICTs is also significantly hindered by various information gaps in the market for technological innovations. From wikis to social media to adaptive learning platforms, the market for technology in education is continuously evolving and expanding, and navigating it is challenging. So far, the identification and scaling of best practices has largely been left to venture philanthropists and incubators, who identify and fund new concepts. The consequence is a multitude of scattered and often duplicated initiatives. If technology is expected to have larger system-wide ramifications, a systemic regulatory framework that links consumers and suppliers of education technologies, provides information about what technologies exist, creates standards, and scales best practices, is required.

In this context, the UPA-government's 2012 National Mission on Education through Information and Communication Technology sought to create a clearinghouse-cum-rating agency for various web-based learning content, and a rating institution for content on the Internet. This is an idea the current government should build on. The need for such agencies has also been a prominent part of discourse in other parts of the world, including the United States, where a paper by Aaron Chatterji and Benjamin Jones makes the case for a third-party rating agency under the Department of Education, to test various instructional technologies and disseminate information on their effectiveness.

Access to technology is just one piece of the puzzle

Access to technology, however, is only one piece of the puzzle – and in and of itself, not the most crucial. In fact, there are countless examples of situations where technology exists, but fails to contribute to the education process. Schemes that just seek to increase access to technology – such as the "One Laptop per Child" – don't always help in improving the quality of education. In Peru, for instance, "a number of colourful laptops sit in a corner of a classroom covered with dust. Given to the school through a program arranged by the Ministry of Education, the laptops were intended to improve students' information communication technology (ICT) skills, as well as their content-related skills." Officials from the World Bank have recounted similar experiences in Delhi, when on visiting schools, they have found computer labs lying locked, and computers unused, because the school did not have any teachers who were trained well enough to use them (Withrop & Marshall, 2012).

Up until now, the conversations around technology in India have paralleled those on education more generally – prioritizing investments and access over experience and outcomes. Most policy documents have viewed technology either as a substitute for teachers where the traditional education system is unavailable, or through the narrow and nebulous lens of 'technical skills for a knowledge society.'

The Ministry of Human Resource Development's *National Mission on Education through Information and Communication Technology*, for instance, views electronic learning "as an effort multiplier for providing access, quality and equality in the sphere of providing education to every learner in the country." Similarly the twelfth Five Year Plan sought to apply ICTs in education with the aim of providing students and teachers access to a variety of resources that may be integrated in the classroom processes. It also states that "Efforts will be made to adopt energy-efficient, cost-effective ICT solutions, which increase the number of access points in each school enabling more and more children to use the facility more frequently."

If we were to look at the application of ICTs in education using the quality, access, and acceleration framework, the access and acceleration opportunities of technology are much better understood. Technology – as the aforementioned policy documents reveal – has been seen as having the ability to offer distance learning to populations that lack access to teachers and schools, and can be leveraged to replicate quality practices in one classroom to several others, at the same time.

But if technology is mainstreamed, its objectives must evolve beyond this, and be directed at precipitating a more profound change in the system. We need to demystify the concept of "e-enabled" schools, and determine clear goals and objectives for the introduction of ICTs in education. If deployed effectively, ICTs have the inherent ability to address some of the key characteristics of the modern education paradigm: extended time and space for learning, collaboration in the creation and sharing of knowledge, a renewed focus on learning, and the personalisation of education (Zinny & McBride, 2013).

Extended time and space for learning

Technology-aided tools have played a role in providing supplementary help – outside of the traditional classroom system – to students, in lieu of 'private tutoring.' Such technology-based remedial or additional help can play a key role in bridging learning inequalities, and addressing some of the shortfalls of the traditional system.

South Africa's MoMaths project seeks to provide students all-day access to mathematics instruction on mobile devices. Students have access to a large database of questions, organised by difficulty-level, and receive immediate feedback on their performance. In addition, Roberts and Vanska (2011) point out that ensuring "equitable access to a mobile learning service was a key consideration of the project." The project team therefore ensured that mobile operators did not impose an additional charge for this service.

Evaluations of this intervention reveal that students in tenth-grade in public schools who used MoMaths regularly received grades that were 7 percent higher than their classmates who didn't use the service (United Nations, 2012). Students who were failing mathematics in grade 9 were one of the groups that witnessed the greatest benefit from this additional help One of the groups who the impact was greatest for were students who were failing mathematics in grade 9. Teachers too had positive feedback for this service and cited "improvements in learners' attitudes towards mathematics [and] reduction in their workload in terms of administration and marking of homework" (United Nations, 2012).

Collaborative Learning and Teaching

If leveraged efficiently, ICTs can also facilitate collaborative knowledge sharing, for both

teachers and students. In Bangladesh for instance, mobile phones were used to support distance teacher training in the Patuakhali district. Teachers participated in a two-week long on-site course, after which they returned to their schools. Each week they participated in a mobile conference with their instructor and class members and submitted assignments via their mobile phones. Initial findings were promising: teacher subject area scores improved from pre-test to post-test and head masters reported noticeable improvements in classroom practice (Winthrop and Marshall, 2012).

Technology has the inherent ability to create networks of people who can stay connected and collaborate. In the case of teachers, such connectivity ensures continuous development, training, and support, and the sharing of ideas towards collective problem-solving. The chapter by Jeevan, Karate, and Townsend, on public school quality, and several STIR case studies make a strong case for collaboration among teachers to nudge the education system towards improved pedagogy. ICTs can be successfully leveraged to facilitate such a process.

Collaborative tools such as blogs, wikis, and social media also alter the way students and school systems can relate to one another. The main advantage of these tools, West (2012) writes, is that they allow multiple access points and avenues, and thereby facilitate collaboration and improvisation. Eventually, if we want to develop our students to be well-adjusted socially, and able to assimilate and participate in an increasingly interconnected global setting, the exposure to diverse and pluralistic opinions and experiences is crucial. The collaborative nature of technology provides a significant opportunity to facilitate this education.

Measure Learning Outcomes and Improving Learning Levels

The starting point of this book has been the need to increase the focus of the education system on improving learning levels and outcomes. In this context, the data-generation ability of technology offers a unique opportunity to not just provide real-time feedback on its return on investment, but also to evaluate the effectiveness of education programmes – at both the micro (teachers and schools), and the macro (districts, cities, and national) levels.

At the micro level, individualisation of pedagogy:
At the micro level, technology-aided tools provide information about academic performance to students, teachers, and parents, allowing teachers to assess the response to different pedagogic approaches. Big Data, by mining learning information generates insights about student performance and learning approaches, provides information to students, teachers, and parents, allowing teachers and school administrators to assess the response to different

pedagogic approaches. Researchers Joesph Beck and Jack Mostow use intelligent tutor software to study student reading comprehension and determine whether re-reading an old story helped children learn words better than reading a new story. They analysed reading time, word knowledge, reading mistakes, and help requests, and concluded that "re-reading a story leads to approximately half as much learning as reading a new story" (West, 2012a)

Such insights are particularly useful for teachers, to understand what approaches work and what don't, and subsequently modify their teaching methods and processes. The Social Networks Adapting Pedagogical Practice or SNAPP tool, for instance, analyses discussion forum activity within various open learning management systems, providing teachers information on disconnected students, low and high performers, and before-and-after metrics to assess the impact of teacher-interventions. In India, social enterprises such as Zaya and Mindspark fill this space, providing platforms for online-testing, following which reports on individual student performance are made available to teachers, who may then isolate and identify the specific challenges children face, and customise their pedagogic processes to respond to learning gaps.

At the school-level, such data may also be compiled for school administrators in the form of dashboards that provide a simple and easy to use interface, and enable them to interpret how their organisation is doing. An example of this is DreamBox, which provides Principals reports showing the proficiency and progress of all students across the school, but also categorised by classrooms and grade levels. Such data enable school leaders to understand the performance in each classroom of their school, and create an environment wherein they can compare the quality of teaching offered by different teachers within their school.

All of this makes schools and teachers more accountable for their own performance, while also allowing pedagogy to be individualised and facilitating a democratisation of the education process. It is useful to reinforce the urgent need for such customisation of teaching methods in India, where a single classroom has a large number of students from diverse backgrounds and vastly different learning levels, and teachers whose ability to understand, innovate, and respond to individual student needs is cannibalised due to several pressures – administrative and curriculum-centred.

At the macro-level, quality management:

At the macro level, education systems – districts, provinces, and countries – are experimenting with various education management information systems (EMIS) that utilize technology to widely disseminate information about learning outcomes.

In San Juan, Argentina, for instance an EMIS system was piloted in 2008, for 192 schools

around the capital city. In the U.S., the Department of Education compiles a national dashboard that summarizes information regarding public schools all over the country. At the state-level, the state of Michigan has a dashboard that "ranks performance as improving, staying the same, or declining in various areas. The dashboard focuses on fourteen indicators for student outcomes (reading proficiency and college readiness), school accountability (meeting federal progress metrics), culture of learning (reports of school bullying and free lunch participation), value for money (number of districts with ongoing deficits), and post-secondary education (tuition as percentage of median family income, retention rates, and graduation rates (West, 2012a).

Educators can also use data analytics for predictive purposes – to predict student outcomes, potential drop outs, and the need for supplementary or remedial assistance. Such predictions provide direction for future interventions and policies. West provides the example of data mining techniques being used in schools in sixteen states across the United States, to identify at-risk students. Analysts have been able to identify students who drop out, using prediction models based on truancy, disciplinary problems, changes in course performance, and overall grades. School districts in some parts also prepare risk reports or scorecards that identify students that are "at risk" and need special assistance.

Ultimately, Mayer-Schönberger and Cukier (2014) summarise this ability of technology to measure learning outcomes and improve quality, writing that data generated by technology should be used in education, just as it has in fields such as retail and advertising – to provide feedback about what approaches work best, and allow customisation based on individual needs. It is crucial, though, to stress that the data generated by the use of ICTs, will not and cannot reform the education sector on their own. They can put us on the right path, but the transformation of the sector towards greater learning for all students is possible only if the data is actually – and constructively – looped back into the education process.

For this, there is an urgent need to build capacity among the various stakeholders in the education sector – teachers, parents, principals, policy leaders, and of course, students themselves – to gather, read, interpret, and respond to the diagnostic feedback and data that technology-aided tools provide. Training for teachers and school leaders should equip them with an appreciation and understanding of such data-driven approaches to pedagogy, while introducing them to various theories and methods of learning.

This points to the central role of teachers in leveraging such tools to isolate the challenges their students face, and thereafter, improvising and customising their pedagogic approaches to address the students' specific needs. This should, once and for all, quell the notion that the role of technology is in conflict or competition with that of the teacher.

Conclusion and Policy Recommendations

There are then at least three frontiers to consider while mainstreaming technology in education – access and infrastructure, the technological innovations market, and the improvement of education quality. Particularly in the third area, the role of technology in measuring impact may be leveraged to resolve a much larger and significant challenge, nudging the education system from a focus on inputs and investments, to quality and outcomes.

The World Bank's ICT Sector Strategy for 2012-2015, which builds on the successful deployment of ICTs in countries such as Ghana, Afghanistan, and Nicaragua, focuses on three pillars of ICTs – connect, innovate, and transform. Connect pertains to information and communication infrastructure, and in particular broadband development; innovate is concerned with supporting the growth of IT-enabled industries, including the development of skills relevant to the industry; and transform is concerned with how ICT-skills may be applied towards specific sectors and goals.

This connect-innovate-transform framework provides a useful starting point for policymakers to think of how technology may be effectively applied in the area of education. But as we emphasise in this essay, it is crucial to begin with the third pillar, to understand how technology may be applied to transform the education sector, and identify the infrastructure that needs to be put in place to meet these goals. Blindly 'connecting' will merely perpetuate the current access-oriented approach that defines our education system, and accomplish little in terms of learning outcomes.
Based on our discussion, we suggest that the government commence the process of leveraging ICTs to improve the quality of the education system, by developing a 'Strategy for ICTs in Education' comprising the following elements:

1. Recognise first and foremost that technology is not a substitute for teachers, but in fact a tool that teachers can effectively leverage to understand student needs and customise their teaching methods.
2. Define "e-enabled school" as one where teachers and principals are well-versed with the utility of ICTs for diagnostic testing, and can subsequently utilise the results of such testing to individualise and customise their pedagogic processes to meet student needs. To facilitate this, a paradigm shift will be needed in the training of teachers and school leaders, to be able to understand and interpret data.
3. Create a strategy for the use of ICTs in diagnostic assessments – aimed at identifying learning needs and individualising and customising the pedagogic process to respond to these needs.

4. Pilot Education Management Information Systems (EMIS) on the lines of Australia's MySchool portal. Also set up dashboards and portals to make information about education outcomes widely available at the district, city, state, and national levels.

5. Use ICTs to create communities of teachers and students across the country. Leverage platforms such as these for teacher training, collaboration, information-sharing, and collective problem solving. Such forums may also be used to share best practices so other teachers and educators across the country may replicate them in their own contexts.

6. Develop a regulatory and information-sharing mechanism for the range of technology-aided innovations that exist around the country, offering ratings, impact-evaluations, and testimonials.

KEY POLICY INSIGHTS

- *There are three broad sets of challenges that need to be addressed while mainstreaming technology in the education sector: putting in place the required technological infrastructure, developing a market for educational innovations, and identifying the goals and objectives of technology in this sector. It is useful to start with identifying the goals and objectives, and then working backwards to build infrastructure and innovations.*
- *There are several impediments to expanding ICT-infrastructure in India: the political, regulatory, and business environment; the lack of digital infrastructure and shortfall in electricity production; and low individual usage of technology*
- *In the education sector, there are several information gaps in the market for technological innovations. For technology to have system-wide implications, a regulatory framework is needed that link consumers and suppliers of education technologies, and facilitates the scaling of best practices*
- *Access to technology, however, is only one piece of the puzzle. If technology is mainstreamed, it should be directed at precipitating a profound change in the system*
- *If deployed effectively, ICTs have the inherent ability to address some of the key characteristics of the modern education paradigm: extended time and space for learning, collaboration in the creation and sharing of knowledge, a renewed focus on learning, and the personalisation of education*
- *The data-generation ability of technology offers a unique opportunity to not just provide real-time feedback on its return on investment, but also to evaluate the effectiveness of education programmes*

- *At the micro-level, this makes school and teachers more accountable for their performance, while allowing pedagogy to be customised to student needs*
- *At the macro-level, this facilitates quality management and provides direction for policy*

- *The data-centred approach to pedagogy points to the need to build capacity among various stakeholders in the education sector – especially teachers and school leaders – to use such tools to understand the challenges students face, and improvise pedagogy accordingly.*

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VIEW FROM THE LAST-MILE

Sawubona: The last-mile perspective

Rupal Nayar

Sawubona.

In Zulu tradition, when you see friends and family, you greet them with the phrase "Sawubona" which means, "I see you. I see your people and the community you belong to." Amid thousands of children falling behind grade level in Indian schools, teachers eagerly seeking feedback, and the government formulating effective policies, the last mile perspective embodies "Sawubona" for parents, their values, culture and diversity.

Across the breath of the nation, spanning many languages, income and political divides, amma and appa are increasingly the biggest champions of their daughters and sons. It is their living dream and ambition to see their child live a life better than their own. For every amma who saves twenty rupees each week under her tattered mattress, to buy her daughter an English story book or almonds for sharp thinking, grassroots organizations are the promise that the education system sees her values and challenges. These unseen parents are the formidable force behind bridging the grade-gap. Only by engaging their energy and dreams, will we build a many-millions-strong Indian education system.

At Zaya learning labs, as we invested time in building trusting relationships with parents, we learnt to understand their decisions. We observed their

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value for culture, their idea of prosperity and affordability. 70 percent of the students enrolled in the government school, Dharavi Transit Camp, Mumbai belong to the nearby Muslim community. Their day begins early at 9 a.m. with three hours of learning at the Madrasa, the religious school, before they arrive at Dharavi Transit Camp to study from 12-5 p.m. At 6 p.m., exhausted, they pour into our learning center. Rain or shine, parents refuse to deter from this schedule. Their desire for their children's value system, rooted deep in culture embodies their closeness with the community. Later, as we began after-school blended learning remedial classes, we saw mothers waiting outside in the summer evening heat while their children finished class. Mostly domestic workers, they would be returning from 10 hours of cleaning in the day. A young social enterprise, we frequently saw many fluctuating days of highs and lows and highs again, yet the mothers' evening commitments always remained the same.

In the summer of 2012, we ran free pilot mathematics summer camps to engage with the community. Later in the fall, when we pitched to parent teacher associations at government and affordable private schools, we realized two words always echoed in their minds – English and tablets. In those words, we understood their desire to see their children as doctors and engineers of tomorrow. In their willingness to pay, we saw the significance of a universal language and technology in their view of the future. Zaya Learning Labs is only one of the many grassroots enterprises. Innovations at the last mile learn, unlearn, and re-learn with the parents. They see our parents, greet them, and grow with them.

65 percent of our people today are under 35-years old, bearing young children and making decisions as consumers every day. For policy in education to be informed, we need to invest time and energy in understanding these teeming millions (as present and future parents), their decisions, visions and values. It is indispensable to not only effectively formulate policies for current impact but also to sow seeds for an educated India tomorrow. The last mile with its keen eye for ground reality and care for relationships promises to provide this rooted understanding.

The policy, resources, and infrastructure are in place. However, the missing link is an effective implementation and incentive structure. Why should a school's leadership and faculty engage with parents and resources? Working with schools across the country, it was challenging to find principals in government schools championing innovation. Shoulder-deep in administrative responsibilities, they either didn't have the time or were not in a position to make executive decisions. Proposals and demos needed to be escalated to local ministers who may or may not review them, let alone sanction funding. Almost all public schools have computer rooms with projectors and credible facilities. However, lack of training for faculty ensures these are nothing but dusty rooms with ample unused

equipment, now defunct. Moreover, unleashing un-tested equipment like Aakash with little battery life and poor touch screens only demotivated parents, students and teachers. Finally, policy has done well to create robust provisions for local parent teacher associations at schools. However, when we reach out to parents, they are unaware of associations and the importance of their responsibilities in enabling efficient schooling. It took us many rounds of persistently following school authorities to arrange for parent gatherings at school. Though when they did schedule meetings, the turnout was always overwhelmingly filled rooms. This continuous access to informing and catalysing parents is important for last-mile innovators, whose solutions are defined around the parent and the child.

Looking back on my journey as a social entrepreneur, I remember a particular moment that created an irrevocable dent in my heart and mind. It was a late rainy evening when a mother and daughter walked into our after-school learning lab to deposit fees for the second semester. Water dripping from her salwaar suit, amma hesitated as she saw the registration form printed in English. Before I could explain, her 11-year-old daughter calmly held amma's hand, provided translation and filled in the details. Standing there, I had the memorable moving privilege of seeing amma transition from silent embarrassment to beaming pride.

Sawubona.

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We have gotten used to thinking that there is an inevitable trade-off between volume and quality. Mass production, we believe, is inevitably accompanied by lower standards. This volume is motivated by the fundamental premise that the trade-off is not inevitable. Large bodies of evidence suggest that it is possible to expand access to education while maintaining quality standards. India has clearly succeeded in getting young children into school, but high attrition in the secondary phase suggests that it has not succeeded in equipping them enough to sustain. The individual and social consequences of this can and will be significant. A meaningful education policy must address this, drawing as much as possible on what we already know from experience and experimentation.

Accelerating Access to Quality Education brings together the perspectives of several stakeholders in education to bear on this premise. As the title suggests, the organizing framework comprises three elements access, quality and acceleration, or scaling up. Each essay provides some key insights and concrete recommendations based on them, which together provide a substantial foundation for education policy. Authors address critical issues and bring into the discussion approaches and solutions to get the debate on education policy reform off to a solid start.

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