Catalysing growth

Education Sector in the Northern Region

CII
Confederation of Indian Industry

edu SUMMIT '11

pwc

Message

Expansion, inclusion and quality are the three cornerstones of our national goals in education. Government of India has set an ambitious target of achieving 21% Gross Enrolment Ratio (GER) by the end of the Twelfth Five Year Plan (2017). This is indeed a formidable task considering that presently our GER stands at 12.4%. If we've to achieve the target of 21% GER, involvement of private sector to complement and supplement the efforts of the Government is imperative

The emergence of India as a knowledge based, service driven economy has turned its human capital into a major asset which can be leveraged to further our growth. This has put the spotlight on severe inadequacies in India's infrastructure for delivery of education. This demographic dividend can become a drag if the demand for skilled personnel that a rapidly growing economy will require is not met both in terms of quantum and quality.

All of us agree that there is a strong need to build bridges between industry, education and skill providers, to synchronize between knowledge and application. The number of educated unemployed is on the rise due to a mismatch between knowledge and skills that are imparted by the educational institutions on the one hand and what is required by industry on the other. It is this situation that puts the blame squarely on the education sector and that is, in fact, the phase through which we are passing in contemporary times. We are saddled with a situation where industry is lamenting skill shortage and at the same time we have educated youth complaining of non-availability of jobs. The problem and therefore the solution to the entire issue of unemployability vs. employability rests on one word, matching.

The need of the hour is to synergize the efforts and resources being deployed by the Government and the corporate world towards education, skill development and seamless integration of both. The ideal way forward will be to seek partnerships that will strengthen the process of quality and inclusive education.

Private sector can contribute to supplement infrastructure, facilities, technology and pedagogy. It is in this context, we feel it important to initiate an ongoing program of dialogue, discussion, action and review in which all the key stakeholders in all segments of education - policy makers, educationists, media and the corporate sector – participate and I am happy to share that CII Northern region's endeavour EduSummit 2011 is one step in this direction.

Vijay K Thadani
Chairman, CII Northern Region &
Chief Executive Officer, NIIT Ltd

Foreword CII

Dear Friends,

As India transitions into a knowledge-based society, it is critical for the country to adapt itself to evolving changes and be responsive to the competitive dynamics. Its competitive edge will be determined by the abilities of the people to create, apply, disseminate and secure this knowledge more effectively. This transition will require India to develop workers into knowledge workers who are more flexible, analytical, adaptable and multi-skilled.

India's demographic dividend of a younger population compared to developed countries is as much an opportunity as it is a challenge. Unlike many other countries, where the young working age population is fast shrinking with higher dependency ratios, India has a demographic advantage with about 70% of the population below the age of 35. But this advantage can only be realized if opportunities for education expand on a massive scale.

Recognizing the critical role that education has in building skilled manpower for economic growth, the Government has initiated radical reforms. The new initiatives towards reforming education have not remained limited only to a specific class of students but are broad based in nature. The transformation in the education sector and the economic impact it could bring, could be as dramatic and substantial.

To match the pace of implementation of these reforms with other parts of the country, the education and skill infrastructure in the Northern Region leaves much to be desired. Confronted with several issues like high drop-out rate, inadequate penetration of vocational education, poor quality of delivery and infrastructure facilities, less over-all spend on education and training, low conversion into streams of higher education, the education sector in North India needs a multi-pronged strategy to tide over these challenges. These huge gaps need to be narrowed but this is not possible without participation of private sector investments

To enable the stakeholders have a clear perspective of the macro environment surrounding the education sector, a survey was conducted by the Knowledge Partner – Pricewaterhouse Coopers Pvt Ltd. An analysis of the survey is included in this Knowledge Paper which also presents broad themes for discussion of this Conference - the Right to Education & facilitating its implementation, Strengthening the link between school & vocational education; Innovative funding and financing models in education; Enhancing the quality of education through the intervention of technology.

CII has been actively engaged with the education sector addressing their key issues relating to policy matter and developing a roadmap to leverage the growth potential of this sector. To build further impetus on the sector, CII organizes various focused interactions, seminars, conferences and expositions to provide an ideal platform for deliberations, and showcase business outlook for various stakeholders. EduSummit 2011 is another step forward in this direction.

We convey our sincere thanks to all the respondents associated with the survey for their tremendous support and valuable inputs. We hope that you find this Knowledge Paper insightful and enriching.

Harpal Singh
Conference Chairman &
Past Chairman, CII Northern Region &
Mentor & Chairman Emeritus Fortis
Healthcare Limited

Foreword PwC

Education and training is a catalyst that enables a country to benefit from its demographic dividend. Provision of education is a strategic necessity from two perspectives - universal access to primary education is universally acknowledged as a key public good; and providing employment-enhancing skills increases productivity and will accelerate future economic growth. It has therefore been an honor to work alongside the CII's Northern Region Committee in preparing this background paper in which we look at issues facing school and vocational education in Northern India. The focus of this paper has been to highlight certain opportunities, constraints and challenges within these segments, with the objective of stimulating thought and innovative ideas, rather than to prescribe comprehensive solutions.

The Right to Education (RTE) Act is a landmark step with the government taking the onus of ensuring universal access to education for the entire population. While acknowledging the primary role of the public sector, the Act envisages the private sector contributing some of its capacity towards providing universal access to primary education. However, much is required to be done towards implementation of this Act, and our chapter on the RTE highlights some of the challenges. Setting up new schools and upgrading facilities in existing schools, training and hiring large numbers of teachers, distributing teaching-learning material and evolving and implementing compensation mechanisms for privately funded schools that take in students from economically weaker sections are among these challenges. Certain North Indian states fare below national averages on key parameters such as children not in school and student-teacher ratio. Significant funding will be required – beyond what has already been envisaged – and private capital and enterprise will likely need to be brought in to make RTE a success.

Our chapter on vocational education describes some of the historical problems this segment has faced due to its perception as being linked to low-paying, unskilled jobs, the lack of cross-linkages with academic courses, the lack of appropriate training capacity and the absence of a qualification framework. 'Rebranding' vocational education through, among other things, focusing on skill enhancement including shorter term courses, increasing industry involvement to make courses more relevant are some steps that could help this segment to fire.

The magnitude of funds required for providing good quality school education to the entire eligible population is substantial – and the government may not be able to bear the entire burden. Our chapter on funding models discusses ways to introduce more private capital and management expertise into education. Options that have been examined include leasing of infrastructure and equipment, provision of services such as teacher training and development or facilities management on a contractual basis; more traditional routes such as charitable contributions, debt and equity have also been discussed.

While expansion of capacity, infrastructure and funding are key challenges to be faced, independent surveys have shown that the quality of education imparted by the system today falls well short of expectation. This is reflected in the poor learning outcomes among a large section of primary school students, teacher shortage or absenteeism and lack of teaching infrastructure and materials. This is of particular concern as government run schools account for the bulk of institutions in the country.Our chapter on quality discusses how IT could help bridge some of these gaps – by disseminating study material or even actual training, tracking student performance, providing aids to teachers or enabling standardized testing across a large body of students.

We believe education will be the engine of India's economic growth in the coming decades; it is important that the enablers are put in place at the earliest if this engine is to propel us in the direction we wish to go.
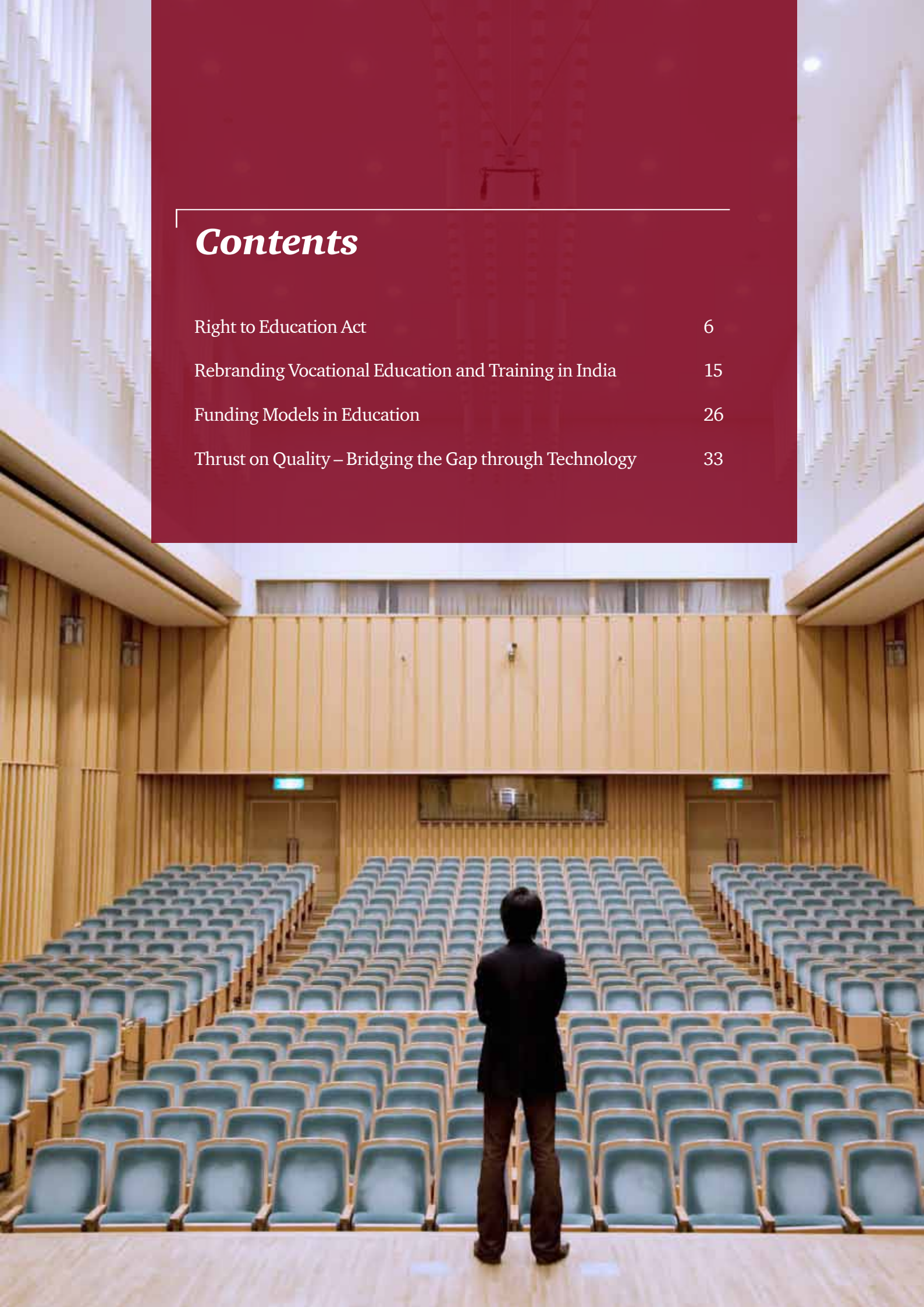

Dhiraj Mathur
Executive Director and
Leader - Education Practice
PwC

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Facilitating the implementation
Right to Education Act

Introduction

"I want every Indian child, girl and boy, to be so touched by the light of education. I want every Indian to dream of a better future and live that dream... Let us together pledge this Act to the children of India."

Prime Minister, Dr Manmohan Singh

Universal Elementary Education (UEE), a constitutional mandate since independence, has been transformed into a right of the child to free and compulsory education between the ages of six and 14 years by the Right to Education (RTE) Act. This paper analyses the key challenges faced by the states, particularly the north Indian ones, and provides practical suggestions for effective implementation of the Act. The legislation puts the onus of ensuring enrolment, attendance and completion of education on the government.

It is debatable whether the state can compel unwilling parents to send their children to school. And such an approach may not yield sustainable results unless appropriate incentives are built in for their entry into the workforce. Therefore, the government may have to look at the education policy and strategies to examine the possibility of skill-building and vocational education for children falling in the higher age bracket where the propensity of drop-out is higher.

While we look at this issue in the next section Rebranding of Vocational Education and Training, we will first focus on issues affecting implementation of the Act in its current form. In this chapter, the challenges attached with meeting RTE norms for infrastructure, quality, human resources, governance and management have been assessed along with the roles and responsibilities of relevant stakeholders and other critical factors to ensure successful implementation of the Act. Key issues such as high population of out-of-school children or a low child sex ratio in certain north Indian states have also been analysed to highlight specific needs.

Key Challenges

Neighbourhood School

The RTE Act seeks to provide universal access to elementary education through neighbourhood schools owned and operated by the government, private agencies or local bodies within a period of three years . The Central Government Rules for RTE (MHRD Notification, 2010) requires the presence of a primary school within a one km radius and an upper-primary school within a three-km radius.

Opening new schools, providing infrastructure facilities, transport requirements, etc. are dependent on the provisions made in the state RTE rules. A detailed mapping exercise of habitations is required to arrive at specific infrastructure and funding requirements. However, there is no clear direction in most states, either with respect to the 25% reservation for economically weaker sections or on establishing adequate special schools. The Act also prohibits establishing or operating schools that do not have appropriate licences or those that are owned and operated by NGOs and other institutions, not recognized under the provisions of the Act or those that do not meet the norms. This is likely to further and significantly increase the financial burden on state governments to become compliant.
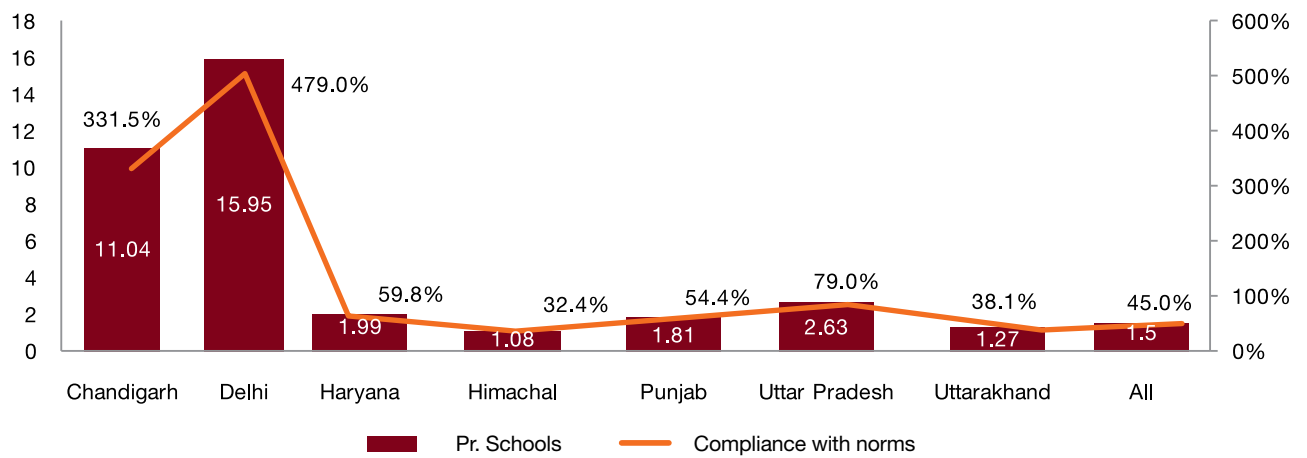
Figure 1

Average primary schools every 10 sq km (left axis) & % compliance with norms (right axis)

Legend: Pr. Schools   Compliance with norms
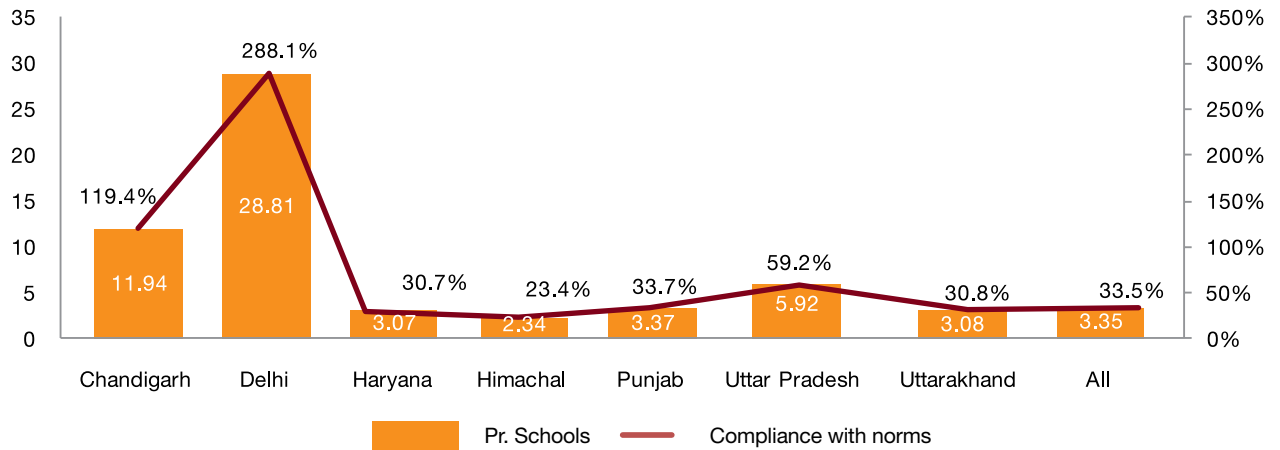
Figure 2

Average upper primary schools every 10 sq km (left axis) & % compliance with norms (right axis)

Legend: Pr. Schools   Compliance with norms

Source: DISE Statistics 2009 -10

The north Indian states such as Haryana, Himachal Pradesh, Punjab, Uttar Pradesh and Uttarakhand, have a huge task at hand to meet the RTE norm of having a neighbourhood school (Figures 1 & 2).

Out-of-School Children

The number of out-of-school children in absolute terms is higher in highly populated states. Uttar Pradesh accounts for over 27 lakh (children between six and 13 years) followed by Haryana and Delhi each with little over one lakh[1] children out of school.

The north Indian states of Uttar Pradesh (7.60%), Delhi (7.06%) and Uttarakhand (3.54%) are among the poorly performing states with respect to the proportion of out-of-school children.

States	Total out-of-school children	Never attended school as % of OOSC
Chandigarh	1,974	88.41
Delhi	124,022	69.29
Himachal Pradesh	2,451	79.36
Haryana	107,205	84.66
Punjab	1,267	100.00
Uttar Pradesh	2,769,111	77.08
Uttarakhand	56,225	55.74
All India	81,50,617	74.89

Source: All India survey of out-of-school children of age six to 13 years under SSA programme in 2009

Section 13 of the RTE Act prohibits screening of children or parents for the child's admission in an age-appropriate class. However, there is no clear strategy laid out yet to enrol and retain out-of-school children and the additional dropped-out children within the school system. Over 70% of these out-of-school children fall under the category of never having attended any school. Special training to admit them into the age-appropriate class is going to take a huge effort in a scenario where we lack trained teachers for even the general education system. In the absence of a clear strategy and well-laid mechanism to induct over-aged children into age-appropriate classes, meeting this requirement under the Act will remain a challenge indefinitely.

Private educational institutions

RTE mandates 25% reservation for the admission of children from economically weaker sections of society, in private and government-aided schools. However, there is no clear direction on how this is to be implemented. Some of the key responsibilities assigned by the Act, but which need further clarity for implementation are as follows:

- Admission and fee-sharing procedures for accommodating 25% of children from economically weaker communities in private and aided-institutions;
- Component of cost to be included in the estimation of average cost per child for reimbursement e.g. expenses for co-curricular activities, excursions, sports etc.;
- Curriculum and certification equivalence across multiple curriculum formats, especially adopted by the private institutions.

Considering that the number of private unaided schools is less than 10%, the impact on the overall implementation of right to education is negligible. However, this has been converted into a big issue by private schools as they foresee difficulties in the mandate provided by the Act. The biggest challenge is how students from economically weaker sections will be emotionally, socially and financially integrated into their current scheme.

[1] All India survey of OOSC of age five and in six to 13 years age group, Department of Elementary Education, 2009

Human Resources

Shortage of trained teachers has compelled state governments to recruit underqualified teachers to meet the ever-growing demand. There are over 7.72 lakh untrained teachers and about 12.06 lakh vacancies against approved posts, within the Indian elementary education system[2]. RTE provides guidelines for the provision of quality human resources to support the teaching learning process in schools.

About 13% of elementary schools in India have a Pupil Teacher Ratio (PTR) greater than 60. Average PTR for elementary schools in north India is 33 whereas in south India, it is 23. Moreover, 10% of the primary schools in north India have only one teacher, which limits grade-specific attention and child-centric teaching and learning experiences. States like Uttarakhand (13%) need to address this more urgently. Twenty-six per cent of schools in UP have a PTR greater than 60. This is the highest in the nation and can be a significant hurdle in creating a congenial teaching-learning environment.

With regards to teachers' training, DISE Flash Statistics (2009-10) reflect that government schools in north India have 90% professionally trained regular teachers. The availability of trained contractual teachers varies across the states with Haryana (99%), Himachal Pradesh (79%), Delhi (100%), Chandigarh (100%), Punjab (100%) faring better than states like UP (34%) and Uttarakhand (42%). Contractual teachers form a large section of service providers and a large proportion of them are yet to meet the quality standards for RTE implementation.

Considering the inclusion of around 30 lakh out-of-school children at a normative PTR of 40, the additional number of teachers required would be around 75,000 in the seven north Indian states. The requirement would further increase if we consider the quality of education and special training required for these under-privileged children.

Enabling school environment

The RTE Act mandates the provision of enabling school environment with safe drinking water, separate girls' toilets, ramps for the physically disabled, kitchen sheds for preparing mid-day meals, playground, etc. in every school.

Less than 60% of the schools in the hill states of Himachal Pradesh and Uttarakhand have a separate girls' toilet of which more than 20% are not functioning. Uttarakhand, Chandigarh and Himachal Pradesh have limited accessibility for physically disabled children with more than 50% schools not having ramps. (*Figure 3*)

Even where facilities exist, the quality needs to be reviewed, especially the drinking water and sanitation facilities.

Considering the financial resources required to meet the norms of neighbourhood schools, resources available from existing welfare schemes need to be channelled into this.

Figure 3

Infrastructure at elementary schools in north Indian states

Source: DISE statistics 2009-10
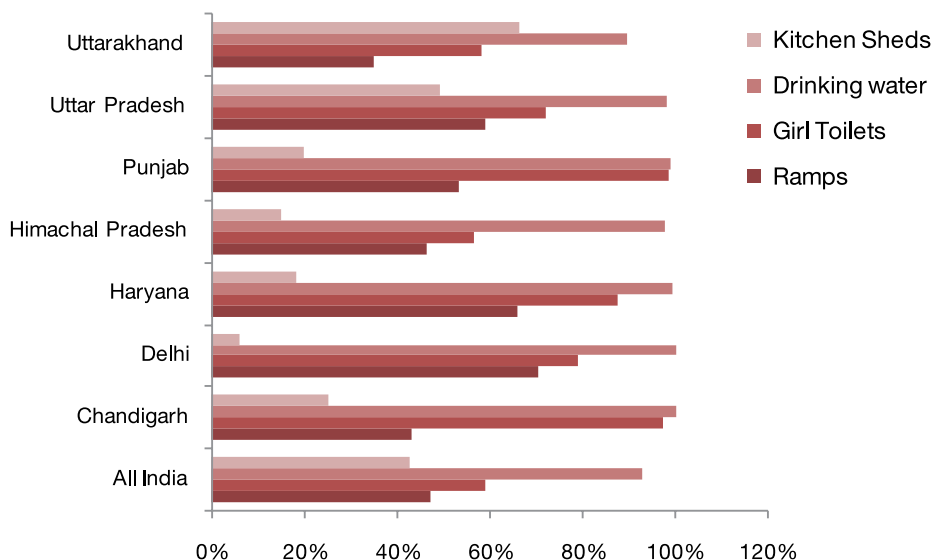
2   http://articles.timesofindia.indiatimes.com/2009-12-25/india/28102164_1_teachers-lakh-schools-hrd-ministry

Teaching-learning resources

The unavailability of Teaching Learning Material (TLM) is yet another factor constraining effective delivery of education. The ASER Study 2010[3] reveals that 20% of Std II and 25% of Std IV classes among the schools visited did not have appropriate teaching and learning materials. Further, it was observed that 37% of the schools have no libraries.

Information and Communication Technology (ICT), as one of the key enablers of quality teaching and learning, is being extensively implemented across the country under the Sarva Shiksha Abhiyan Computer Aided-Learning (CAL) programme. Presently, government and government-aided schools in Chandigarh (73%) and Delhi (67%) have achieved notable success in the provision of CAL facilities while states like UP (4%) have a long way to go. This is discussed in greater detail later in the report.

Financial resources

The total outlay estimated by the National University of Educational Planning and Administration (NUEPA) for implementation of the RTE Act is ₹ 171,484 crore. Given the infrastructure and quality norms mandated under the Act, the overall estimate as assessed by the NUEPA will be insufficient to meet requirements.

State	₹ (in crore)
Chandigarh	70
Delhi	972
Haryana	2,712
Himachal Pradesh	1,184
Punjab	3,557
Uttarakhand	1,455
Uttar Pradesh	38,909

Further, the revised estimates as assessed by the Anil Bordia Committee (2010) stand at ₹ 182,828 crore which is higher than the NEUPA estimates. As per recent reports and reviews, funding is a matter of concern as most of the states are in favour of at least 90% of funding from the central government.

With respect to the north Indian states, the fund requirement for Uttar Pradesh alone, as assessed by the Anil Bordia Committee, is as high as 21% of the overall estimate for India. The overall requirement is around ₹ 49,000 crore for all the north Indian states combined.

Though the provision for SSA has increased extensively from ₹ 10,671 crore in 2007-08 to ₹ 21,000 crore in 2011-12, there is a wide gap with respect to the requirements for implementing the RTE Act.

Governance and management

The National Commission for the Protection of Child Rights (NCPCR) has been assigned the key role of monitoring the implementation of the Act. The State Commission for the Protection of Child Rights (SCPCRs) is mandated to be established under the Act as well. However, only 11 states have successfully established SCPCRs. While the central government has to ensure that each of the state governments establishes their respective SCPCRs, they should, as an interim arrangement, establish the Right to Education Protection Authority (REPA), in order to facilitate undeterred implementation of the Act. Delhi is one of the first among the north Indian states to have set up a functioning SCPCR.

RTE has empowered School Management Committees (SMCs) comprising local representatives (25%) and parents (75%) with considerable responsibility related to the development, monitoring and planning of School Development Plans (SDP) along with other financial and administrative matters. Capacity-building and participation of these committee members especially parents from varied backgrounds, has emerged to be a significant concern to ensure effective management of schools as per the Act.

In recent times, both central and state governments have extensively experimented with partnerships with the private sector as well as with NGOs, in a wide spectrum of complementing roles within the education sector e.g. introduction of ICTs, provision of mid-day meals etc. The absence of state-specific rules makes their roles in implementing RTE ambiguous.

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3   Provisional Annual Status of Education
   Report 2010 published by Pratham

Strategies and next steps

An integrated approach, with multi-stakeholder collaboration and partnership is critical for the implementation of the Act. Therefore, as a first step, to enable multiple stakeholder participation, it is important that the Act and the rules, guidelines and strategies for implementation, as developed by the state and the central government, acknowledge the complementing roles of each of the stakeholders, define the prospects and provide opportunities for their active involvement.

Figure 4

An integrated approach to RTE implementation
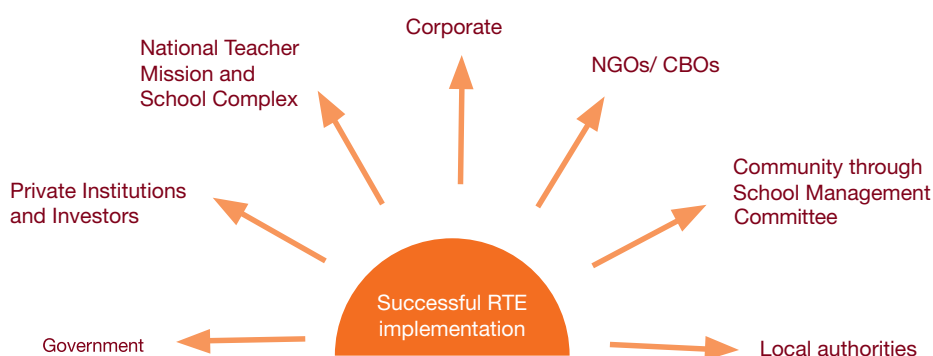
Government

Though large-scale funding is already approved and committed by the government, and the level of sharing with the state governments is defined, the government needs to appreciate that the available funds are inadequate to ensure successful implementation of the RTE Act. Further, the government should systematically elevate itself from its present multi-role status into playing the most critical role of a policy-maker.

The states have to lay out state rules and a time-bound action plan to achieve the RTE norms within the next two to three months. The states have to also immediately form REPA where SCPCRs are yet to be formed. Stakeholder consultations at the state level should be initiated before notifying the rules.

In the rules to be framed under the Act, the roles and responsibilities of the education department/directorate, the local authority, NGOs, the private sector and citizens at large should be clearly outlined. Regulatory framework needs to be in place for clearly specifying the costs that would be reimbursed to private institutions.

State governments should establish clear linkages between school management committees and local authorities for effective implementation of the Act.

Private institutions and investors

As identified by the RTE Act, there is a shared responsibility between the public and private institutions in the successful implementation of the Act. However, clarity needs to be brought in through appropriate rules and regulations, guidelines and implementing strategies, to be developed by the central and state governments. Some of the key responsibilities assigned by the Act, which need further clarity for implementation include the following:

(i) Admission and fee-sharing procedures for accommodating 25% children from economically weaker communities in private and aided institutions;

(ii) Curriculum and certification equivalence across multiple curriculum formats, especially those adopted by private institutions e.g. IB;

(iii) Acknowledgement as neighbourhood schools etc.

The implementation of RTE would not only require private investment in building neighbourhood schools to bridge the infrastructure gap but will also get a major fillip from the professional management of education delivery under the PPP mode. The involvement of private sector education service providers will help in special training required for out-of-school children. NGOs can also play a critical role in bringing such children to school and retaining them.

Another area where private sector participation can be explored is to set up more teacher training institutes and B. Ed. colleges to meet the huge requirement of trained teachers.

Corporate

It is a well recognized fact that school education is a public good. Consequently, the Government will always have the principal responsibility in its provision. However, it must also be acknowledged that corporate India has traditionally been inclined to be socially responsible. Yet the strategic shift from mere philanthropy to the incorporation of the stakeholders' interest in the business model is relatively recent.

As per a recent study conducted in June 2009 on the CSR activities of 300 corporate houses, education has remained one of the most preferred sectors for investment with 19.64% share of the overall CSR investments in the country. Another study reported that India's 'charitable giving' rose to 0.6% of GDP by 2006. In a recent development, under the Companies Bill, 2009, the Government of India had proposed an allocation of two per cent of the last three years' average profits by the business houses for corporate social responsibility.

However, there will always be a limit to the funds available through CSR commitments of corporate houses towards the education sector and the government will eventually have to evaluate for-profit options for school education. It will be essential to develop an investment model where corporate partnership can be adequately leveraged for the implementation of the RTE Act.

Areas where NGOs/CBOs could support:

- *Mobilisation and awareness-building*
- *Advocacy*
- *Training of School Management Committee (SMC)*
- *Training of personnel of Panchayati Raj Institutions (PRIs)*
- *Curriculum and specialised support like bridge courses, reading ability etc.*
- *Children with special needs*
- *On issues of gender, inclusion, equity etc.*
- *Child-friendly infrastructure and teaching-learning environment*
- *Monitoring and facilitating grievance redressal mechanism*
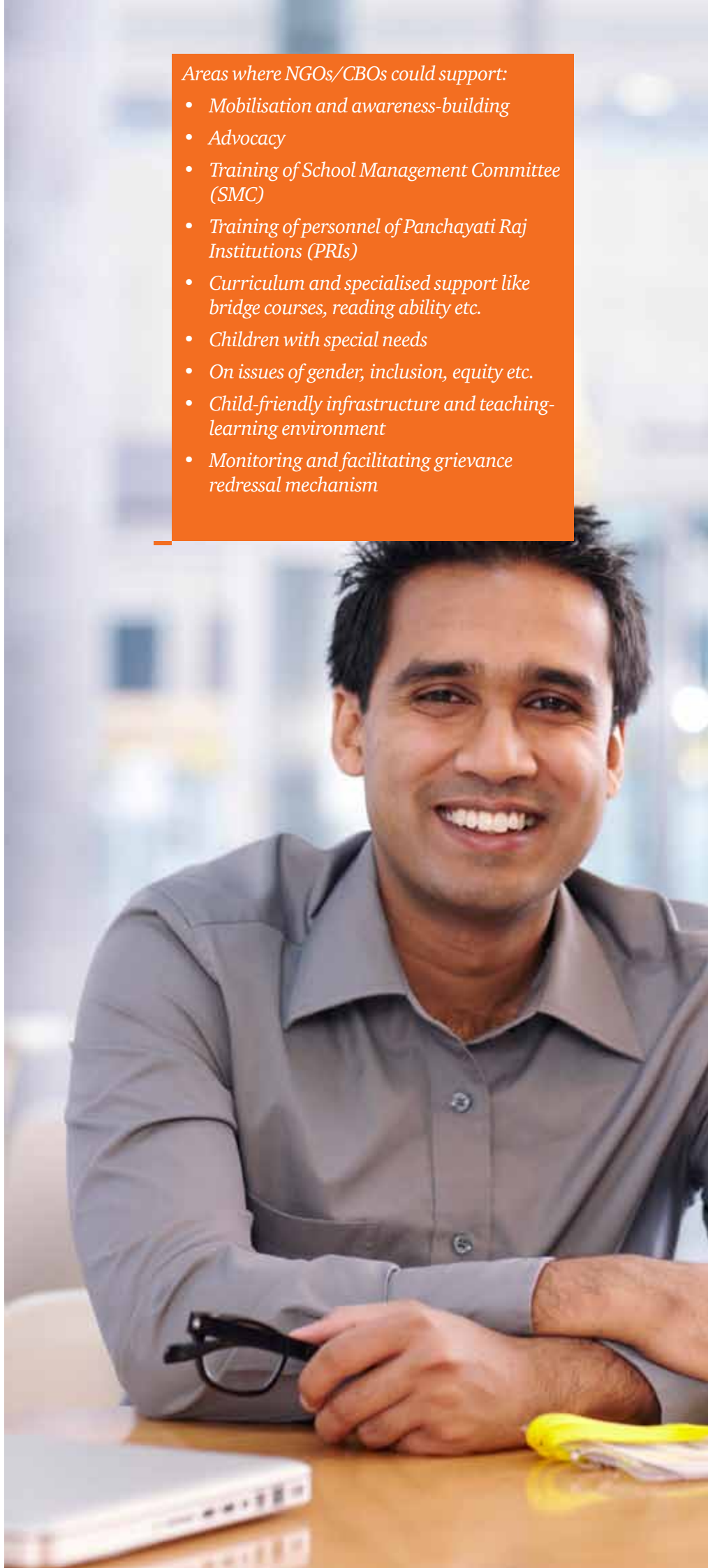
NGOs and community-based organisations

NGOs and CBOs have for long been at the forefront in the advocacy of programmatic interventions to take quality education to remote and under-privileged sections of society.

Their active involvement and achievements in making the Sarva Shiksha Abhiyan successful cannot be undermined. Given their role in successfully implementing the RTE Act, it is important to make adequate provisions within the Act to enable progressive partnerships. Their participation and partnership can range from policy formulation to advocacy, promotion and institutional and programmatic interventions.

Community through school management committee

As highlighted earlier, parents and the community have an important role to play in the successful implementation of the RTE Act. Given the presence of an institutional arrangement at the school level, in the form of the School Management Committee (SMC), it is appropriate to empower and strengthen the capacity of the SMC to enable active and meaningful participation of parents as well as the community at large. Capacity-building of the SMCs can be carried out with the help of NGOs, CBOs or through the active engagement of student representatives at the higher education level under the social service scheme, scouts and guides, and others. Member representatives of the SMC need to be adequately empowered for carrying out critical tasks under the Act;

(i)   Development of the school development plan;

(ii) Carrying out social audit;

(iii) Monitoring of academic performance and other supportive activities at school;

(iv) Mainstreaming of out-of-school children etc.

Local bodies

It is proposed that local bodies are empowered beyond the Act's provisions, especially in the administration of public schools in ensuring availability of qualified teaching resources, quality teaching and learning material, support on capacity-building of teachers within their jurisdiction, and responsibility for the performance appraisal and career progression of the teaching staff. It is important for the conscious implementation of decentralised administration as prescribed under the 73rd and 74th amendments to the Constitution.

National teacher mission and school complex

A state-level teacher training and development plan should be developed for attracting talent and training of existing teachers. A national teacher mission needs to be set up at the central level to look at the holistic development of the teaching profession. Further, it is important to clearly lay down the qualification and skill requirements for teachers within a skill development framework to ensure regular and periodic refresher trainings. A performance tracking framework for teachers based on learning outcomes of children should be developed to differentiate performance and identify specific training requirements for teachers.

In order to counter the possible quality compromise in teaching and learning, in the context of a no-detention policy, it is very important to provide an institutional mechanism to ensure required learning outcomes.

Deriving the idea of 'school complex' from the Kothari Commission (1964-66), we suggest an innovative formation of the school complex to ensure higher quality in learning outcomes. The proposed arrangement will be a partnership between teachers of a group of feeding elementary schools and teachers of the beneficiary high school within the neighbourhood. Under this arrangement, teachers of the high school can provide subject-specific guidance to the elementary school teachers and facilitate a higher rate of transition of children to the high school equipped with adequate learning levels.

The key functions to be performed by the school complex include the following:

(a) Providing need-based training to the elementary school teachers within its neighbourhood,

(b) Carrying out ongoing reviews of the learning levels achieved at various grades in the feeding school, and

(c) Conducting an annual review and assessment of the teachers of the feeding school and supporting the annual performance appraisal of the teachers.

Key priorities for north Indian states

The ways forward suggested in the analysis above are holistic and need to be customised as per state-specific needs, priorities and challenges. In this section, we highlight some of the emerging priorities that need to be addressed specifically by the north Indian states.

Uttar Pradesh: The population in the age group of zero to six years is highest in India with 297 lakh children (Census 2011). Th present enrolment being 239 lakh children, there will be additional 50 lakh children in the next two to three years apart from the large number of out-of-school children mentioned earlier. In UP, immediate focus is needed on building neighbourhood school infrastructure.

Haryana: The child sex ratio (age group of zero to six years) in Haryana is the lowest in India with only 830 girls to 1000 boys (Census 2011). Moreover, the literacy rate of women in the state is 66.77. Elementary education requires a strong gender focus to ensure access and retention of girl children in the schools. This will also empower girls in the state.

Himachal Pradesh: The utilisation of funds for elementary education , viz. under Sarva Siksha Abhijan (SSA), National Programme for Education of Girls at Elementary Level (NPEGEL) and Kasturba Gandhi Balika Vidyalaya (KGBA) was just about 50% in 2009-10 and 37.8% in 2010-11 (for the first six months of the financial year). The systems of implementation need to be reviewed and strengthened especially, given the infrastructure gaps in upgraded facilities such as computer-aided learning (CAL), ramps etc.

Uttarakhand: Uttarakhand has a reasonably high literate population with a literacy rate of 79.6%. There is huge scope for teacher training in the state (only 42% of contractual teachers are presently trained) to improve the quality of education.

Delhi: There are over one lakh out-of-school children in Delhi, given the large migratory population and other disadvantaged groups living in the capital city. Innovative strategies have been initiated by various private and non-government organisations such as Khulja Sim Sim Project, Chalta Firta Schools, Residential Bridge Schools, etc. Recognition and integration of such initiatives is necessary to ensure that the successful ones are appropriately replicated and new strategies are worked out. This should be undertaken in association with private players, NGOs and other stakeholders.

Chandigarh: Private unaided schools constitute 32.39%, the highest in the country. The rules for RTE implementation for Chandigarh need to be set up after consultations with private schools. Corporate houses and High Net worth Individuals (HNIs) can be roped in to act as sponsors for children from economically backward sections to integrate with the existing students in these private institutions so as to limit the pressure on schools to raise the fees of the paying students.

The Act became operative and enforceable with effect from 8 April 2010. Given the level of preparedness, the magnitude of the number of seats required and the lack of teachers and other infrastructural deficiencies discussed above, rapid strides need to be made to quickly achieve the desired social goals

Rebranding Vocational Education and Training in India

Introduction

"India is a developing country with developed talent."

Jack Welch, Chief Executive of General Electric Co. (GE)

Since its liberalization in the early 1990s, the Indian economy has transitioned into a global force. However, in order to be competitive in the global market place, it is critical for the country to adapt itself to evolving changes and be responsive to the competitive dynamics. Skills and knowledge are the engines of economic growth and social development of any country. As India transitions into a knowledge-based society, its competitive edge will be determined by the abilities of its people to create, apply, disseminate and secure this knowledge more effectively. This transition will require India to develop workers into knowledge workers who are more flexible, analytical, adaptable and multi-skilled.

India's demographic dividend of a younger population compared to developed countries is as much an opportunity as it is a challenge.

Presently, India has a population of 1,210,193,422 (2011 Census). Therefore, as per projected figures (stated by the Office of the Registrar General and Census Commissioner, 2006), approximately over 750 million people will be in the working age of 15 to 59 years. This group is expected to expand to 916 million in 2020 and to a staggering 1.02 billion in 2030. The Annual Report to The People on Employment (Ministry of Labour and Employment, 2010) highlights that in absolute numbers, there will be approximately 63.5 million new entrants to the working age group between 2011 and 2016. Further, the report also states that the bulk of this increase in the population is likely to take place in this relatively younger age group of 20 to 35, a trend that will make India one of the youngest nations in the world.

The task of meeting global talent needs with an educated and trained workforce is too daunting for the government to take on. In this context, nurturing efforts on skill development and promoting vocational education and training (VET) finds more relevance, due to its potential to contribute to the employability of the youth and in enhancing the productivity at the individual, industry and national levels.

Working age population (18-64 yrs in millions)

Countries	1950	2010	2050
China	338	973	870
India	221	781	1,098
United States	102	212	248
Indonesia	44	156	184
Brazil	30	132	137

Source: Standford Centre on Longevity, Population Age Shifts Will Reshape Global Work Force April 2010

Percentage population in 15-59 years of age
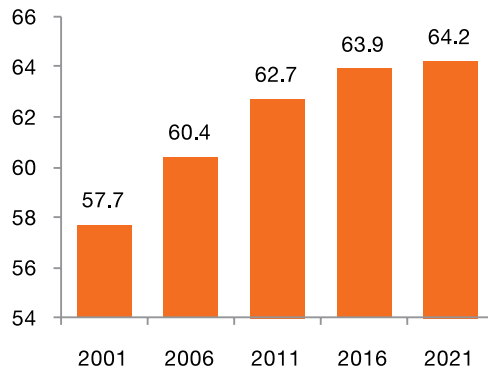
Sources: Office of Registrar General & Census Commissioner, 2006

Current VET system

The current vocational education is shifting from its earlier supply mode largely with a welfare approach to a demand-driven approach. The government has undertaken various efforts to consolidate its scattered VET delivery system under various departments and ministries e.g. the Ministry of Human Resource Development (MHRD), the Ministry of Labour and Employment (MoLE) through its Director General of Employment and Training (DGET), the Ministry of Urban Affairs, the Ministry of Rural Development, etc. There is a significant presence of private players and non-formal vocational training initiatives in the country that are yet to be brought under a unified umbrella to ensure universal access to vocational training.

To respond to the dynamic skill development requirement of the country, the government had announced the establishment of a National Mission on Skill Development, a semi-autonomous wing of the Ministry of Labour and Employment. The mission was to oversee the progress of vocational training in different sectors and provide an overarching vision of the country's manpower development. The relationship of the country's manpower development with the need of skilled human resources in the changing market with a focus on quality and standards was to be set in consultation with industry. The mission aims to build the skills of 500 million people in India by 2022,

mainly by fostering private sector initiatives and providing viability gap funding. It started with ₹ 658 crore in 2008-09 and has been allocated ₹ 500 crore in 2011-12.

Vocational education and training in India operates on a three-tier institutional intervention, with the basic tier operating at the secondary school level, the second tier operating at the certificate level through the Industrial Training Institutes (ITIs) and the third tier operating at the diploma level through the polytechnics.

Secondary schools: At present, there are over 9,619 secondary schools (i.e. eight per cent of the overall) offering about 150 vocational courses focusing on broad areas across industry sectors (Annual Report, MHRD, 2009-10) creating opportunities for 10 lakh children at the +2 level. There are courses in agriculture (e.g. veterinary pharmacy/technology, watershed management), business and commerce (e.g. taxation practices, stenography), humanities (e.g. classical dance, entrepreneurship), engineering and technology (e.g. lineman, cost-effective building technology), home science (e.g. textile design, gerontology) and health and para-medical skills (e.g. x-ray technology, health/sanitary inspection). In addition, the National Institute of Open Schooling (NIOS) provides over 80 courses in the distant education mode. The total enrolment under the vocational stream of secondary schooling is about six lakh (i.e. three per cent of the total enrolled in 10+2 level).

Vision: DGET

- *Skilled workforce from five to 50% by 2021*
- *Enhanced productivity of the Indian worker from US $3 per person per hour to US $ 20 by 2021*
- *Variation in trades for training from 107 to 2000 by 2021*
- *Formal training to include unorganised sector*

Table: Total Capacity of ITI and ITC in India

Region	No of government ITI	Seating capacity	No of private ITC	Seating capacity	Total no. of ITI and ITC	Total seating capacity
Northern region	777	118,818	1828	204,529	2,605	323,347
Southern region	394	90,460	2,802	306,070	3,196	396,530
Eastern region	200	49,242	1,046	173,645	1,246	222,887
Western region	818	194,826	822	76,458	1,640	271,284
Total	2189	453,346	6,498	760,702	8,687	1,214,048

Source: Annual Report 2010-11 of Ministry of Labour and Employment as of 30.11.2010

Industrial Training Institutes (ITIs): ITIs are promoted by the state governments and the Industrial Training Centres (ITCs) are promoted by the private sector. Currently, there are over 8,687 ITIs/ITCs, enrolling over 12.14 lakh students across various vocational streams and states. The central government is implementing the vocational training improvement project, Technical Education Quality Improvement Programme (TEQIP), supported by the World Bank, which focuses on upgrading 400 ITIs as centres of excellence. The region-wise analysis reveals that the southern and northern regions are covered better through ITI/ITCs, thus resulting in considerable progress as compared to the other regions as stated here. The detailed data (Annual Report 2010-11: Ministry of Labour and Employment) also revealed the variations in the northern region where Punjab and Haryana are on a fast growth trajectory but states like Uttarakhand are yet to ensure adequate coverage.

Polytechnics/diploma programme: There are about 1,244 government and private polytechnics in India, under the MHRD, with an overall seating capacity of 295,000[4]. Polytechnics, which impart three-year diploma courses in engineering branches and also offer post-diploma and advanced diploma programmes of one to two years duration in different subjects.

The challenge to access polytechnics is similar to other sectors of education. The Economic Survey 2010-11 reveals that the status and gap of polytechnics in proportion to high schools across all states is quite wide. Amongst the north Indian states, Punjab scores the highest with 2.17% coverage of polytechnics compared to existing high schools.

A nation-wide scheme of 'sub-mission on polytechnics' was launched by MHRD, in 2008. Under this scheme, new polytechnics are being set up in every district, where there aren't any yet, with central government funding and through Public Private Partnership (PPP).

Skill Formation and Employment Assurance in the Unorganised Sector, 2009, National Commission for Enterprises in the Unorganised Sector, Government of India

Table: Number of polytechnics in comparison to college for general education and senior basic schools or high schools/other at same level

State and union territory	High/ higher sec/ intermediate/ pre-degree jr colleges	College for general education	% to the high schools	Polytechnic	% to the high schools
Haryana	6095	179	2.94%	32	0.52%
Himachal					
Pradesh	2964	64	2.16%	7	0.24%
Punjab	4110	231	5.62%	89	2.17%
Uttar Pradesh	15518	2050	13.21%	110	0.71%
Uttarakhand	2362	107	4.53%	18	0.76%
Chandigarh	126	17	13.49%	1	0.79%
Delhi	1768	89	5.03%	16	0.90%
Karnataka	15261	638	4.18%	186	1.22%
Maharashtra	20337	2182	10.33%	178	0.88%

Source: Economic Survey 2010-11

Key Challenges

Less preferred

The education reforms as envisioned by the Kothari Commission in 1966 conceived that, by the year 2000, 25% of the student enrolment at the secondary school level will be in the vocational stream. As per recent data, the overall enrolment of students in the vocational stream at the secondary schooling level is less than three per cent, representing 3.5 lakh to 4 lakh students. In contrast, other developed and developing countries highlight much higher preference for vocational streams of education at the secondary schooling level as reflected in the table below.

Further, it is also observed that only three per cent of rural youth and six per cent of urban youth undergo any form of technical and vocational education and training. A survey conducted in 2006 establishes that over 51% of the ITIs record under-utilisation of their approved seating capacity, while 25% of them over-utilise their capacity and 24% of them record full utilisation. This reflects poor quality and planning as per the demand.

There is an element of social stigma associated with pursuing a vocational stream of education, due to the perception that it relates only to securing manual jobs, and that it is reserved for economically and socially backward communities. In recent years, there has been further transition into higher academic and professional streams, which is perceived to be superior to the vocational stream.

Status of education and vocational training (15-29 yrs)

Country	Secondary enrolment /ratio	No. of students in vocational training ('000s)	Vocational–technical share (% of total secondary enrolments)
Russia	88%	6,277	60%
China	52%	15,300	55%
Chile	70%	652	40%
Indonesia	43%	4,109	33%
Korea	93%	2,060	31%
Mexico	58%	-	12%
Malaysia	59	533	11%
South Africa	77	-	1%
India	37000*	1,000	2.70%

Source: World Bank (2006), * 11th Five Year Plan, Planning Commission, India

NSSO 61st round on Employment and Unemployment highlights that 87.81% of the population in the age group of 15 to 29 years. are not in any form of education and nor are they engaged in any vocational training. In the current situation, it is a challenge to skill this large section of youth who are currently unemployed or are adding to the unskilled labour force of the country.
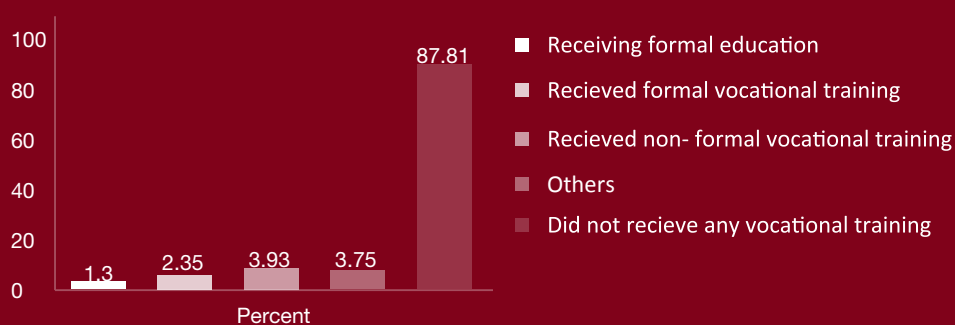
Source: NSSO 61st Round Employment and Unemployment

Lack of cross-linkage and convergence to academic streams

There is no cross-linkage between the vocational stream and the academic stream, which could allow horizontal and vertical movement. This means that for someone who had started on a vocational stream of education, there is less scope for any change in course to the academic stream and vice versa, during the life-cycle. There is a definite need for providing cross-linkages and convergence between the streams of education and flexible entry and exit options, thus enabling horizontal progression across sectors and trade-specific specialisation. Flexibility should also be provided to enable life-long learning and minimise pre-qualification requirements/restrictions.

On the other hand, there is not enough emphasis on short-duration training courses designed to impart job-specific skills. Unlike in China, where there exist over 4,000 short-duration modular courses, tailor-made to employment requirements, the Indian vocational education stream relies on few long-duration (two to three years) courses, encompassing limited skill sets as mapped (an illustration only) by the Task Force on Skill Development commissioned by the Planning Commission (2007).

Capability attainment pyramid
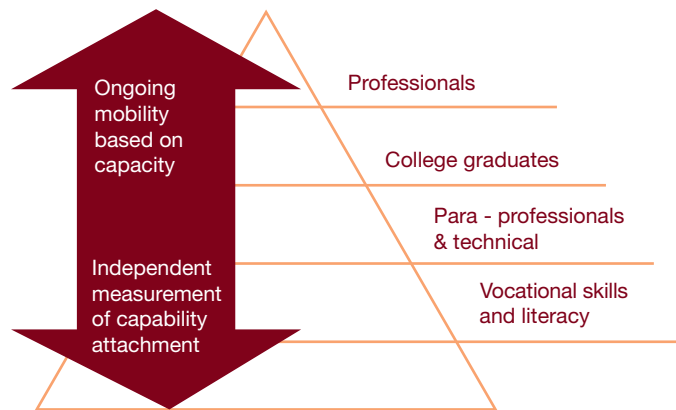
Drawn from Aspen Institute, India

India's emerging skill map (An illustration)

Manufacturing	Services	Entrepreneurship
Organised industry	Organised service	City
Automobile assembly line Welding mechanic Lathe machine operator CNC operator mechanics Sheet metal and fabrication Painters	Bell boy at a hotel Security guard Call centre employee Mall sales person Post sale service mechanic	Plumber/carpenter TY/radio mechanic
Unorganised industry	Unorganised service	Small town
Mason Motor driving institute Plumber/carpenter	Door-to-door salesman Stenographer/typist	Mason Plumber/carpenter TV/radio mechanic
Self employment	Self employment	Rural
Tailor Mason Plumber/carpenter	Stenographer/typist	Mason Plumber/carpenter

Source: Report of the Task Force on Skill Development Planning Commission, Government Of India, May 2007

However, several best practices also exist across the country and internationally to make VET more accessible and inclusive, through various models of scaling up with market-driven focus. Case studies of Andhra Pradesh and Gujarat in the country and Turkey internationally have been indicated in a template below.

Good practices in other regions and internationally

Name of the project	scheme	Focus sector	Key aspects of the programme	Success story
Andhra Pradesh Rural Poverty project*	Employment Generation & Marketing Mission (EGMM) 450 training centres in rural and tribal areas	Service sector focussed: viz. retail, health, sales, telecom, hospitality; accounts; IT and IT enabled services; construction and textiles	Covered: 22 districts in Andhra Pradesh Module of 15 days to 90 days each Conducted free-of-cost for youth	226909 trained and 183891 places between 2005-2008 100 companies e.g; HDFC Rural BPOs; ADIDAS shoes; Hindustan Unilever's 'Pure-it'; 'Heritage Fresh', and Aditya-Birla's 'More'
Skill Development Mission, Government of Gujarat*	TDD-GKS Training Scheduled caste students training programme Paid training in rural areas	Key growth industries in the state e.g.: pharmaceuticals, roads and buildings, mechanical industries, hospitality training;	40 relevant subject areas Small batches: 30 students per batch. Web-based management information system All training included programme with basic communication skills	Over 15,000 students trained Companies like Batliboi Industries, Cadila Pharmaceuticals, Tata Chemicals, Hindustan Lever and Suzlon Energy involved
Strengthening Vocational Education and Training Project (SVET), Turkey**	Establish a more qualified vocational education and training (VET) system with EU funding as per EU standards	65 occupational standards regarding 576 occupations developed by labour analysis experts of the labour market team	5000 modules developed for 145 VET institutions Training for teachers of formal and non-formal VET institutions Knowledge exchange with EU good practice.	23,443 people & 14,772 teachers trained

Source: * State of India's Livelihoods: The 4 P Report (ed. Dutta and Sharma), ACCESS Development Services & The livelihood School 2010; ** http://www.avrupa.info.tr

Lack of key linkages

One of the key reasons for the curriculum not aligning with industry and market needs is the lack of industry-institution linkages. This in turn has resulted in developing unemployable resources on one hand, and hampering employment prospects in Indian as well as international markets on the other. Though traditionally, the responsibility of training the workforce is shared by the industry, in practice the industrial set-up largely embraces independent training schemes and schedules relevant to employment. The private sector largely undertakes in-house training programmes but training to outsiders is very limited, restricted to catering to their own felt needs in the nature of captive skill development. This is largely because of the fear of losing trained skilled workers to competition, which has resulted in constant shortages in private investment in this area.

Further, though there is provision for the formal participation of industry representatives and experts in designing the curriculum and hiring the apprentices, there is still significant mismatch observed between the industry's skill requirements and the talent-pool emerging out of ITIs/ITCs. The programme for handing over ITIs to the private sector has not really taken off due to various administrative problems ranging from discipline and control over the staff, hiring decisions as well as decisions around curriculum design.

Lack of appropriate training capacity

With the increase in the working population, the demand for training capacity has swelled significantly. The training capacity in the country is inadequate, in quantity as well as quality. For instance, in the year before the National Skill Development Corporation (NSDC) was established, the training capacity available was about 4.3 million per year against a demand of 12.8 million per year. Moreover, not all available programmes meet the requirements of industry yet. Further, most of the training institutions are established in Tier 1 and Tier 2 towns, which constrain access of target beneficiaries from the rural areas to qualify or upgrade their skills. In addition, there is a lack of learning opportunities for the present low-productive labour force to retrain and equip themselves competitively.

Attracting appropriately qualified teachers and mentors is a greater challenge. This is due to the popular perception that the vocational profession largely comprises 'manual work' besides having low remuneration.

Absence of a qualification framework

The Indian vocational education system does not have a nationally recognised qualification framework yet in place. The structure of the vocational education system in India is fragmented, with 17 different organisations contributing to the development, planning and overall management. Further, those engaged in the work-stream within the informal sector have varied educational attainment, experience and trade exposures. This makes it difficult to have a common qualification framework across the trades. The absence of a common and comprehensive curriculum framework further constrains the management of the diversity of input skills, grading of the courseware, alignment of courses to input skill sets and the certification processes and equivalence.

Strategies to re-brand VET

A re-branding exercise is required to make VET a more accessible and viable choice for young people. This process will cover key aspects through a focussed plan, with region-wise analysis covering the demand and supply side aspects. Some of the intuitive pointers are discussed below.

Focus on skill development

As detailed earlier, the first and foremost requirement is to create acceptance among target communities and society at large, on the comparability and competitiveness of the vocational education stream, as against the general educational stream. This can be brought in by focusing on 'skill development' rather than on the

The key aspects of the National Skill Development Policy:

- *Create opportunities for all to acquire skills throughout life across all backgrounds.*

- *Remove barriers to access and address specific skill development needs of disadvantaged groups.*

- *Enhance individuals' employability (wage/self employment) and ability to adapt to changing technologies and labour market demands.*

- *Use innovative delivery models such as decentralised delivery, mobile training, distance learning, e-learning and web-based learning.*

- *Develop National Vocational Qualification Framework and convergence of all existing initiatives.*

current one-time course-centric vocational education system. The rebranding of the system should keep in mind the following principles outlined in the National Skill Development Policy.

Encourage public-private partnership

An enormous need for expanding the physical training capacity beyond the Tier 1 and Tier 2 towns is emerging. Though the government allocations at central and state levels have increased consistently, the funds remain inadequate. A meaningfully structured public-private partnership can support scale-up of the infrastructure provision to meet market demand. In addition, the PPP approach has the advantage of linking the vocational education stream with the corporate sector, thereby adding to the image of the former and also supporting the vocational education stream to be responsive to market needs. Training imparted through in-house industry programmes will be recognised.

Enhance access

Aligning to the larger goals of the government of India on skill development, it is appropriate to expand the reach of the vocational education stream to relevant stakeholders/communities. Further, there is enormous need for establishing new institutions across regions. Presently, operational institutions are largely concentrated within urban and semi-urban pockets. The use of technology has been recommended for alternate modes for teaching and learning e.g. e-learning, distance learning, mobile classrooms, etc. Greater exposure and familiarity of the target communities and the existence of clearly defined industry-institution linkages will enhance higher participation and enrolment.

Enhance employment opportunities

An important re-branding action is to establish employment equivalence across the blue- and white-colour stratum of employment. Further, given the ever-growing demand for vocational stream employment, appropriate market positioning of the same, in terms of due recognition and remuneration is very critical as a leap towards re-branding the vocational stream. In addition, appropriate skill requirements mapping needs to be carried out in each of the industries within the target region, appropriate training

provided to enhance the employability with due collaboration and cooperation between industry and institution. Policy interventions need to strengthen the markets for employability of vocational education through such measures as appropriate communication and advocacy, structure fiscal incentives to incentivize industry to extend job opportunities, rightful wages and career opportunities for vocationally qualified candidates especially in neighbourhood industries to enhance local employment.

Enable standardisation

Curriculum standardisation (through an appropriately developed qualification framework) and standardisation of assessment for certification are critical for cross-sector acceptance of the resources developed. A standardised assessment and certification process will remove regional imbalances and spur geographic mobility by ensuring a consistent product despite inconsistent inputs, and will create an increased acceptance by industry of candidates graduating out of this standardised system. Further, a framework to help evolve standards in line with industry changes should be created.

The National Council for Vocational Training (NCVT) operates under DGET under MoLE and advises the central government on vocational training. State Councils for Vocational Training (SCVTs), as well as trade committees,

have been established to assist the NCVT. An increasing linkage with other regulatory bodies like the All India Council for Technical Education (AICTE), the University Grants Commission (UGC), the Departments of Technical Education and Higher Education of the State Governments needs to be built through necessary regulatory reforms so as to ensure vertical and horizontal mobility as well as quality standards.

Certification and licensing

For making VET more market-oriented, it is important to make it compulsory for individuals seeking jobs as technicians in various vocations to have a certificate/ trade licence. Trainees of affiliated trades/ units and eligible private candidates appear in the trade tests. The certification and recognition process needs to be standardised as per industry requirements at state and national levels. Coverage of non-formal trainings are to be considered too in this respect,

Focus areas for northern states

The components of Net State Domestic Product (NSDP) at factor cost by industry of origin (at constant prices) across the northern states released by the Reserve Bank of India (RBI, 2010) indicates the focus in each of the broad economic sectors viz. agriculture, industry and services. The plan to strengthen vocational training across various sectors should be decided on the emerging focus of the economy as illustrated below.

Components Of NSDP across the northern states	Agriculture	Industry	Services
Punjab (09-10))	35.72%	12.11%	52.17%
Uttar Pradesh (08-09)	30.18%	12.03%	57.78%
Uttarakhand (08-09)	16.80%	16.37%	66.83%
Chandigarh (08-09)	0.48%	6.28%	93.24%
Delhi (07-08)	0.75%	8.10%	91.15%
Haryana (09-10)	21.80%	16.27%	61.93%
Himachal Pradesh (08-09)	22.90%	17.27%	59.83%

Source: www.rbi.org,on/scripts/pulications (Reserve Bank of India compiled information from Central Statistical Organisation as on 31.07.2010

Agriculture: It is important that states like Punjab and Uttar Pradesh continue to build on their strength in the sector by enhancing skills through its vocational training programmes.

Industry: Haryana and Himachal Pradesh have reflected a higher trend in industry growth. Therefore more focus covering the manufacturing sector is required here. However, there is a focus on mining in Uttarakhand and the trainings should contribute to the increasing investment in the sector.

Services: States like Delhi and Chandigarh are highly urbanised and increasingly focus on the service sector which includes trading, hospitality, real estate and banking and insurance.

Enhancing demand

The utilisation of existing seats under the trade apprentices under NCVT indicate that the states have to work extensively to generate demand for existing services. The table below indicates from the relative State level demand patterns that at present preferences for trade apprentice trainings are fairly low in states like Delhi, Chandigarh, Punjab and Uttarakhand. This also indicates that courses need to be modified to address market demands making them more popular and viable in terms of available job opportunities, etc.

A need to enhance women's participation

Information indicates that the northern region has made impressive progress in the area of VET in comparison to other regions of India. However, women's participation in VET is an area of concern exemplified in the table above. The data points to the fact that in all the states, women have utilised less than five per cent seats in Trade Apprentice, with Uttarakhand and Chandigarh having no women participation at all in these courses.

The need to expose women of the northern region to vocational training can also be reinforced through the Census 2011 findings that indicate low literacy levels of women in many of the states in the region, viz. Haryana has 77.77% female literacy compared to 85.38% literate of males while Uttarakhand has 70.70% literate females as compared to 88.33% literate males and Punjab with 71.34% female literacy as compared to 81.48% of male literacy. In fact, Uttar Pradesh's female literacy is 59.20% with 79.24% of male literacy which is far below the national female literacy rate of 65.46%.

State/ UT	Seats located	Seats utilised	% Utilisation	No of women	% of women
Punjab	6385	2608	40%	28	1.07%
Uttar Pradesh	19412	14575	75%	691	4.74%
Uttarakhand	2153	815	38%	--	0.00%
Chandigarh	88	16	18%	--	0.00%
Delhi	1362	216	16%	2	0.93%
Haryana	8138	5225	64%	144	2.76%
Himachal Pradesh	1853	1240	67%	16	1.29%

Source: Annual Report 2010-11, Ministry of Labour and Employment

Funding Models in Education

The public education system in India, unlike in many other countries, is not the preferred system for most of the population. While there are over 1.1 million government-owned schools in India, over 30% of Indian students choose to study at privately owned schools. Most of them are in schools that are entirely privately funded[5]. And the percentage of students opting for private education[6] is on the rise, as families shun the public school system for its low quality–perceived or real–implying that those who can afford private schooling usually opt for it.

Indian households have a high propensity to spend on education for their children. Households allocate 10 to 15% of their consumption expenditure to children's education. On the other hand, government expenditure on education is rising, with the central government alone budgeting approximately ₹ 499 billion to education in 2010-11[7]. Including expenditure by various states, total public expenditure on education could be estimated at approximately ₹ 1.8 trillion, or around 3.5% of GDP[8]. Despite this, the public education system suffers from three key challenges:

- Large parts of the country are under-covered by schools. Complying with the norms laid out by the Right to Education Act (RTE) would require over Rs 182,000 crore. A majority of the state governments are asking the central government to fund over 90% of the additional requirements. So despite the increased allocations, funds will continue to be a constraint.
- Poor quality and overall shortage of infrastructure from basic buildings to laboratories and computer equipment and library or sports facilities plague schools. In 2009-10, only 16% of schools had a computer and only 39% had an electricity connection[9]. This has been discussed in the Chapter on RTE too.
- Poor quality of learning outcomes as a result of teacher absenteeism and lack of teacher training and low motivation among teachers is the norm. In 2009, only 50% of Std V students could read a Std II level text, while only 36% could solve a division problem[10].

In the private unaided segment within K-12, there is significant demand for good quality education and a willingness to pay tuition fees that covers all costs associated with providing such quality. Over 15% of households in India earn more than ₹ 300,000 per annum and this population is growing at a CAGR of about 15%[11]. This means that the demand for high quality private paid education is increasing at a steady rate. The challenge, in this segment, is to attract sufficient capital to set up schools to meet this demand.

Funding education therefore encompasses two core issues:

- How to facilitate efficient allocation of public and private resources to ensure that an acceptable quality of education is offered to all students who opt for free education
- How to enable private capital to be channelled towards establishing and running institutions for those willing and able to pay for private schooling, thereby reducing the burden on public finances

In order to analyse the quantum of funding involved, it is important to take a look at the structure of investments and costs associated with putting, and keeping, a student in school.

5   DISE Flash Statistics 2009-10
6   'Mr & Mrs India' CLSA Jul 2009; NCAER and Future Capital Holdings Research 2008; 'Education in India: 2007-08' NSS 64th Round NSSO May 2010 and PwC Analysis
7   Crisil Education Annual Report 2010
8   CII Higher Education Report 2010, Data for Year 2009
9   DISE Flash Statistics 2009-10
10   Annual Status of Education Report (ASER) 2009 by Pratham
11   Institute of South Asian Studies Working Paper 2008, NCAER's Great Indian Middle Class 2004 and PwC Analysis

Cost of educating a school student

There are two types of costs associated with providing school education. Capital investments are required to establish facilities for the student. Operating costs are incurred on a recurring basis in order to deliver education to that student.

The large number of students currently not in the K-12 system (estimated at over 50 million in 2007) implies significant investment in new facilities to bring these students to school, since a large proportion of school dropouts are a result of lack of access to schooling. Today, while almost the entire population has access to primary schooling (reflected by GER of 114 as of 2007-08), penetration of secondary schooling is less resulting in lower GER at this level. Access to schooling can only be increased by investing in additional school infrastructure.

While norms have been set in terms of student-teacher ratios, teacher qualification requirements and school infrastructure, inability to adhere to these norms has contributed to poor quality education. Provision of education, in a manner that complies with or exceeds the minimum standards set, involves a significant cost per student. We now turn to an overview of these costs.

Capital expenditure[12]

Most boards of secondary education specify norms of at least 25 square feet of built-up area per student. Assuming a permanent structure of good quality is being put up, it implies a cost of ₹ 25,000 per student in building and related infrastructure. This amount excludes the cost of the land. In addition, there will be investment in library and computer facilities, laboratories, sports equipment, etc. Including these items, it is reasonable to expect that the investment required to set up the minimum level of facilities for a new school would be to the order of ₹ 40,000 to ₹ 45,000[13] per student, assuming a minimum school size of approximately 1000 students.

In the case of premium (generally privately owned) schools, with more space and facilities per student, the investment could be in the range of ₹ 60,000 to ₹ 75,000[14] per student or more depending on the size of the school and the level of facilities offered.

In addition, significant investment would be required for land for the school within a city. In or around a large metropolitan area, if this land were to be purchased commercially, the cost could range between ₹ 1 lakh to ₹ 4 lakh[15] per student, depending on the location.

Operating cost

The primary drivers of operating cost are staff salaries and student-teacher ratios. Staff salaries account for over 90% of the operating cost of government-owned schools, and between 60 to 70% of cost for privately owned schools[16]. Other costs of running an institution include repairs and maintenance, stationary, utilities and administrative overheads. A associated costs, necessary to keep a student in school, include the cost of uniforms, textbooks and transportation.

While certain privately owned schools targeted at the poorer sections of society are able to deliver acceptable quality school education at less than ₹ 900 per student per month even in cities[17], they do so by means of innovations, e.g. by training members from the local community to function as 'para-teachers' at a lower salary than that commanded by trained teachers. If norms regarding teacher qualifications were to be strictly applied, such schools would likely fall short. As discussed in the Chapter on RTE, this is a very serious issue in complying with RTE norms.

Government expenditure per student, on the other hand, appears to be in the range of ₹ 5,000 to ₹ 6,000 per student per annum[18]. Costs are low partly due to under-spending on non-staff costs and overheads (industry sources indicate that almost 90% of the expenditure is on salaries) and a

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12 PwC Analysis based on CBSE Guidelines and Industry Discussions
13 CLSA Report,2008/Credit Suisse Report 2008
14 PwC Analysis based on industry discussions
15 PwC Analysis based on industry discussions
16 PwC Analysis based on industry discussions
17 PwC Analysis based on industry discussions with NGOs
18 PwC Analysis based on Selected Education Statistics by MHRD 2007-08 and CII Higher Education 2010 Report

poor student-teacher ratio. Further, once recommendations regarding the Sixth Pay Commission are implemented, one can expect this amount to increase by over 100%.

Applying standard norms (i.e. student-teacher ratio of 30:1) and assuming teacher salaries were to increase to approximately ₹ 22,000 per month on an average, one arrives at a per student operating cost of about ₹ 12,000 to ₹ 13,000 per annum, or about ₹ 1,000 per month. This includes all normal operating overheads and expenses. In addition, there could be further expenditure incurred on uniforms, transportation, etc.

Indicative costs/student/annum	₹
Salary	8,976
Administration expenses	911
Books, Stationary, Aids, Extra currics	807
Staff welfare & insurance	626
Snacks for children	405
Miscellaneous	1,061
Total cost/student	**12,786**

Implications of the cost structure

Given the numbers of students involved from I to XII Stds (i.e. about 289 million children of school-going age in India as of 2007), the level of expenditure required to provide everyone with good quality education is extremely large. At an annual cost of ₹ 12,500 per student, the total expenditure required to support schooling for 289 million K-12 students would be approximately ₹ 3.69 trillion, or about USD 82 billion. If K-12 education were to be provided free-of-cost to everyone, government expenditure on school education would need to increase nearly three-fold. Similarly, establishing facilities for an additional 13 million students (assuming approximately 25% of students not in school today do not have access to a school in their vicinity) would require a one-time investment of about ₹ 0.52 trillion[19].

19   PwC Analysis based on industry discussions

Expenditure of this scale is likely to be too high for the government alone to bear. Merely providing free schooling to all would imply spending about 8.2% of GDP[20] every year on K-12 education. However, research shows that Indian households are willing to spend a significant portion of their income on education. Consumer studies have shown that, for Indian households, 10 to 15% of the consumption expenditure is allocated to children's education. This is reflected in the fact that about 30% of school students study at privately owned and funded schools[21], where the cost of education is recovered through fees.

An increase in the number of privately owned and funded schools that attract the more affluent students reduces the burden on public funds required for education. Privately funded schools, being dependent on their ability to attract and retain fee-paying students, are usually well geared to provide a higher quality of education than their publicly funded counterparts. However, while the tuition fees charged by such schools are sufficient to cover operating costs, substantial capital is required in order to establish such schools. If capital is to be attracted for the setting-up of such schools to bridge the huge demand-supply gap, a mechanism would be required to enable provision of a reasonable rate of return to the providers of this capital, be they debt or equity investors.

Today approximately 15% of the population (an estimated 31 million households in 2010) earn over ₹ 300,000 per annum as household income. This section of the population can afford to pay tuition fees sufficient to cover the operating cost of a school. And it generally chooses to do so. As incomes grow, the size of this population will continue to fuel a demand for private schooling. Policy reforms need to be in place to facilitate and / or allow infusion of private capital with attendant regulatory controls.

Options for public funding

Public private partnerships, in the form of privately owned 'aided' schools, have been a feature of the public K-12 system in India for many years. While these schools are owned, established and managed by the private sector, they receive public or government funding to support their operations, enabling them to charge minimal tuition fees. Today, there are an estimated 80,000 aided schools or sections (i.e. a primary or secondary section) in India, making up about six per cent of all schools[22].

Public private partnerships and private finance initiatives have been a key feature of the public schooling systems in several countries including the UK, Australia and New Zealand. In these countries, such initiatives are used to improve education outcomes and increase funding efficiency by increasing accountability, introducing professional practices and linking spending to specific targets or outcomes. Three major types of public private partnerships are possible in the public schooling segment:

- Management contracts
- Build-own-operate or build-operate-transfer models

Management contracts

Management contracts offer a mechanism through which a partnership could be achieved between the public and private sectors in order to facilitate more effective and efficient delivery of education and education outcomes. Such arrangements allow the public sector to access the resources, practices and capabilities of private providers while, at the same time, limiting the risk being borne by the provider to areas directly under its control. At the same time, payments can be linked to achieve certain defined targets or outcomes. In this way, management contracts can promote more efficient usage of public funds in order to achieve the desired outcomes in a more efficient manner.

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20   As in 2009
21   DISE Flash Statistics 2009-10
22   Selected Education Statistics by MHRD 2007-08

Planning for management contracts would involve setting aside a portion of the budgeted expenditure for management contracts, determining key objectives of the exercise, and developing a contract structure that balances performance, remuneration and risk for the provider. Identifying viable clusters or bundles of schools for management contracts will make the proposition more attractive for private sector providers.

Different types of management contracts can be structured in order to tackle specific shortcomings in the current public education system.

Teacher supply or development

Management contracts can be structured wherein a private party supplies teachers to publicly financed schools. The private provider will then be responsible for delivery of teaching (and therefore of learning outcomes) in certain key subjects/areas or for training and mentoring existing teachers.

While this type of management contract will enable the public sector to benefit from skills and experience available in the private sector and can, in the medium term, help reduce the effects of low teacher quality and morale in the public sector, it also helps manage operating cost for the selected public schools. On the other hand, definition of objectives and measurable metrics in such contracts may be difficult. Further, this type of contract does not actually change the structure or availability of funding for the schools selected.

Facilities or infrastructure lease or management

Several states in India have experimented with initiatives wherein the private sector has been contracted to set up and maintain computing infrastructure at state-owned schools. In this model, the upfront investment (e.g. in computers and networking equipment) is made by the private provider who is also responsible for the maintenance and management of the infrastructure. The provider is then recompensed through an annual lease payment. Similar contracts can be developed for other facilities including buildings, laboratory equipment, libraries, etc.

This type of arrangement reduces the burden of one-time investment on public funds by converting capital investment into revenue expenditure in the form of 'lease rentals'. At the same time, if a large cluster of schools is bundled together for the contract, it is possible for the provider to achieve economies of scale, the benefits of which could then be passed on to the contracting party.

It may be noted that management contracts are a common cost-effective mode of scaling-up in the private sector as well.

Build-own-operate models

Charter schools, wherein private parties are allowed to set up and operate schools with specific objectives (i.e. the charter) and these schools receive a fixed payment out of public funds within which to operate, have been set up with some success in various countries including the US. This model is similar to the 'aided school' model already in existence. However, in the aided schools, payments are made piecemeal for specific activities (e.g. staff salaries, furniture allowance, building maintenance allowance). In a build-own-operate school, a fixed total amount can be paid per student, which would be designed to cover both the operating cost as well as provide a reasonable return on the up-front capital investment.

In structure, this type of arrangement will be similar to the PPP agreements developed in many infrastructure sectors. In addition, the government can provide subsidies, such as free land, and allow additional sources of income, such as allowing the building and grounds to be rented or used for other activities (such as running a vocational training institute or a marriage hall). This will improve the potential IRR on the project and help to attract more private partners.

This type of model or arrangement enables private financing to be leveraged for public use, while at the same time, allowing equitable sharing of risk. Since the risk of capacity usage is with the private provider, in such a model, the private
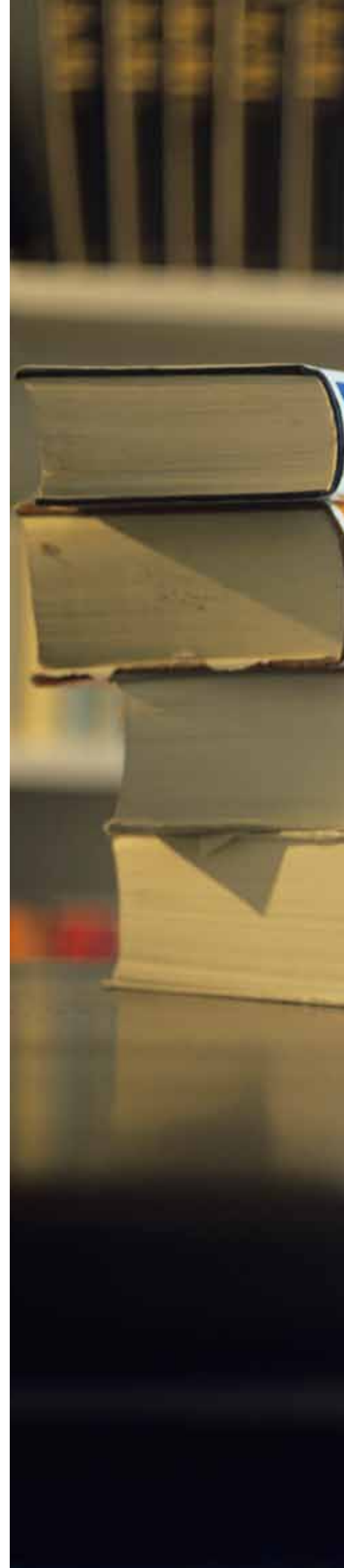
sector player is motivated to provide high-quality education to attract more students as this increases revenue. Further criteria, such as results in board examinations or other indicators of learning outcomes could be used to determine different grades or levels of payment and further incentivise the provider(s) to provide high-quality education.

Current regulations do not permit profit-making entities (companies, partnership firms, etc.) to own or operate a school. Changes in these regulations may be required (or special exceptions allowed) in order to enable these arrangements. Furthermore, specific analysis would need to be conducted in order to assess the structure of costs, investments and revenues. This would be in order to develop an arrangement that offers a return to the private provider, that is commensurate with the risk and investment involved while promoting key objectives.

Options for private funding

Unlike in the case of public schooling, in privately funded K-12 institutions, all funding for asset creation as well as operations comes from private sources. Revenue from tuition fees is usually more than sufficient to cover recurring operational expenses. These institutions typically target the more affluent sections of the population where there is a high willingness and ability to pay for higher quality education. Since revenues are more than sufficient to cover cost, such institutions often provide a significantly higher quality of education than publicly owned and funded K-12 institutions do.

Economic growth, and the resultant increase in income levels, can be expected to drive rapid growth in demand for high-quality privately funded K-12 schools. The size of the population earning more than ₹ 300,000 per annum is growing at over 12% per annum. For the segment earning more than ₹ 1,550,000 per annum, the equivalent growth rate is over 21%.

Charitable funding and debt

As per existing regulations in India, schools need to be owned and operated by non-profit entities such as trusts, societies or companies established under Section 25 of the Companies Act. Traditionally, most privately owned K-12 schools in India have been set up either by social and religious organisations (e.g. the DAV schools or schools owned by the Society of Jesus), or by family trusts and foundations (e.g. schools set up by certain business families). Capital contributions for these schools have come from donations and philanthropic contributions. Interest income, earned on funds available with these societies and trusts has been a source of revenue to cover recurring expenses.

Since, for most trusts and societies, the quantum of philanthropic contribution available has been limited, most of these organisations run a small number (often only one or two) schools, resulting in the extremely fragmented nature of the private K-12 sector in India. Certain religious organisations, having access to large and regular sources of funding, have been notable exceptions to this trend.

Given limits to the availability of charitable funds as capital contribution, most societies running educational institutions in the K-12 segment have relied on debt funding for growth. The segment is well suited to debt funding due to its asset-heavy nature and steady cash flow over the long term. However, ownership of assets in a non-profit can pose challenges to the extent to which they can be used as collateral for debt. This can make it difficult for some trusts and societies to raise significant amounts of debt funding.

Given the importance of capacity-building in the education sector, it is important that education be given priority-sector status to promote provision of debt funding. Presently, only loans given to individuals to finance their own education qualify as priority-sector lending. Creation of facilities enabling banks to refinance loans given to this sector at low interest rates will enable educational trusts and societies to raise cheaper debt funding for their growth. Further, allowing larger educational bodies to raise debt directly from private investors

(e.g. through a bond issue) or to securitise future revenues (such as tuition fees) will also vastly increase the quantum of funding available to education players.

Equity funding

Since K-12 institutions must necessarily be owned by non-profit entities, equity funding (i.e. issue of common shares) is not available as a route to raise capital for the owners. The only exception is that of certain categories of K-12 schools offering foreign educational curricula. For-profit entities are allowed in many other segments of education such as professional skills enhancement or child skill development, for instance. These segments have, therefore, attracted significant amounts of private investment, including venture capital funding, which has stimulated growth.

Rapid growth is expected in the paid education segment, with the number of households earning over ₹ 300,000 per annum growing at over 12% per annum. This implies that significant capacity expansion will be required for this segment which currently comprises 50 million students (that attend private unaided schools) . Even a five per cent annual increase in the number of students opting for tuition fee-supported education will require an investment of ₹ 175 to ₹ 250 billion in capacity creation. Raising such a large quantum of funds may not be possible unless the providers of capital are promised a return commensurate with the risk involved. Equity is a commonly used mechanism of providing such a return.

The number of for-profit schools worldwide is small. However, in parts of the US and in certain GCC countries, the number of for-profit schools has been growing in recent years. Promoters of such schools raise funds from venture capital. Steady cash flows and robust EBITDA margins offered by such businesses help attract investors enabling them to raise capital to fund new growth.

Given the sensitive nature of the sector, it is important that checks and balances are put in place to ensure maintenance of quality and prevention of unscrupulous profiteering. On the other hand, given that privately funded schools need to attract paying students in order to support themselves, it can reasonably be expected that market forces will drive them to provide a level of quality that is expected by the market and

commensurate with the fees charged.

The way forward: Outsourcing of infrastructure and facilities

The major requirement for funding in the privately funded K-12 segment is to finance asset and infrastructure creation–buying land, putting up a building and procuring furniture, laboratory and computer equipment, and library and sports facilities. The cost of operation can be more than sufficiently covered by tuition fees.

An option for such K-12 institutions, since they are owned by non-profit entities and have limited access to capital, is to outsource the asset creation. This implies that these institutions lease expensive infrastructure, such as land, buildings, furniture, laboratories and sports facilities, from private for-profit entities in much the same way as public school systems might. This enables greater investment, as these for-profit entities have greater access to capital as they can raise both debt and equity since they are able to pay appropriate returns to both classes of investors. For the K-12 institution, it enables conversion of an up-front capital investment into a manageable annual cost. Some state regulations do permit the sponsoring body to lease rather than own the land and building. This is in a way, short of allowing for- profit entities, that can facilitate the entry of private capital to help augment supply.

The cost of such an arrangement can be high, as leases and other service charges attract various taxes, but they do offer a funding option to otherwise capital-starved non-profit entities. In situations where the managements of both the for-profit and non-profit entities are the same, there could be an issue of conflict of interest and opacity with respect to the pricing of services or rents. Appropriate mechanisms need to be put in place to facilitate transparency in such arrangements.

Thrust on Quality

Bridging the Gap through Technology

Introduction

In the two decades since economic reforms were launched, the Indian economy has attained a size of over USD 1 trillion. To sustain the current growth momentum necessary to move people out of poverty, people need to be given access to opportunities. Our schools, colleges and vocational training system have fallen short of this task - not only do they lack the capacity to cater to the number of students, they also fall short in quality with the result that students are not prepared for modern and new workplaces. The result of this has been a matter of intense scrutiny and concern. There has been a chorus of protest amongst employers in the country about the unemployability of the youth passing out of schools and colleges in the country.

Students, particularly in schools in the vast rural segment are still taught using outdated pedagogy. This is particularly relevant in Government schools and colleges that account for about 80 percent of total schools and colleges in the country. For a variety of reasons, a large part of the formal education system in India is unable to produce graduates with the skills necessary in the workplace. A report published by NASSCOM (the industry body for the IT and ITES industries) estimated that 70 % of technical/professional graduates (e.g. engineers) and up to 80% of 'general' graduates (e.g. BA, BSc) are not immediately employable in the IT and ITES sectors. Another study published by the CII estimated that, in the Banking & Financial Services, Healthcare and Manufacturing sectors, only 40-45% of those academically qualified for a particular job were actually employable. Reports published by the National Skills Development Corporation (NSDC) indicate severe skill gaps related to technical knowledge as well as 'soft skills' compared with the requirements for most industries.

The National Knowledge Commission (NKC) has proposed a national evaluation body to monitor the quality of both government and private schools, using a results-based monitoring framework based on a short list of monitorable criteria that include both process and outcome indicators. It emphasises the need to move away from rote-learning to understanding concepts, developing good comprehension and communication skills and learning how to access knowledge independently. The NKC recommends that wherever feasible, ICT should be made more accessible to teachers, students and administration for learning, training, research, administration, management, monitoring, etc.

For higher education, the NKC observes that our university system is in a state of disrepair and has emphasized that a quantitative expansion of the university system must be accompanied by qualitative improvement. Not only should new universities be better universities, but even existing universities, including State universities, must reform and improve themselves. We need better facilities, more and better teachers, a flexible approach to curriculum development to make it more relevant, more effective pedagogical and learning methods and more meaningful evaluation systems. The quality of governance of many state educational institutions is a cause for concern.

Role of ICT

Against this backdrop, Information Communication and Technology (ICT) can be applied to create an education ecosystem which enables teachers to be effective, improves the quality of course delivery and brings about efficiency through established monitoring and evaluation framework.

To address the concern of quality education using ICT, we need to address the three key challenges facing education eco system today:

1. How to improve the quality of course material?
2. How to improve quality of course delivery?
3. How to address capacity building of teachers?
4. How to ensure quality education is being imparted?

In this chapter we will look at how ICT can address each of the key challenges, key initiatives undertaken and the current challenges faced by in implementing the initiatives.

How to improve quality of course material

Creating and having access to quality and relevant Open Educational Resources and using them judiciously is the single most important determinant of the impact ICT will have on the learning achievements of students. Content creation has to be democratized and made more responsive to the local context. High quality instructional material should be created applying principles of learner centric approach, interactive, participatory and collaborative learning models. This requires technological, subject matter as well as pedagogical expertise.

National Knowledge Network is one of the initiatives undertaken to generate quality course content and make it accessible across the country. The Mission has two major components: content generation and providing connectivity, including last mile connectivity for students and institutions. On the content generation front, a wiki style collaborative platform under the supervision of content advisory committees is envisaged. Renowned institutions and educators will be part of the content generation effort and different activities in respective areas of excellence may be coordinated by them. This content would then be available across the network.

Gyanpedia is an interactive portal for collating, organizing, and circulating contents generated in schools in India through a single open web platform. The initiative with support from the Digital Empowerment Foundation (DEF) aims to give a boost to nationwide e-learning and e-education efforts. It has online presence of over 50,000 students and covers 10 States.

How to improve course delivery

ICT as a subject in the curriculum and the corresponding establishment of computer laboratories has been in focus for over one and half decade now. Recent trend shows that more and more schools are using ICT not only to teach computer skills to students but more as a tool for course delivery. ICT tools like multimedia (CD-ROMs and DVDs), LCD TV, projectors and internet or satellite connectivity are increasingly being used by private schools as a channel for teaching students. Recently state governments have tied up with private players like Educomp for providing similar "Smart Class" facilities in government schools in rural areas.

Some key initiatives undertaken for improving course delivery through use of ICT are:

- India @ Schools - Under this project, support was provided for procurement of computers, software and connectivity to government schools. SMART Classes were also set up in central government schools systems
- Sarva Shiksha Abhiyan (SSA) - SSA in collaboration with IL&FS Education and Technology service limited is in the process of establishing computer labs equipped with computers, and printers in 200 schools in Bihar
- EduComp Solutions ltd. - EduComp partnered with state governments to provide infrastructural support and content to over 14,000 government schools
- One Laptop per Child (OLPC) - After running a pilot project in a rural village, OLPC is committed to provide 250,000 XO laptops for 1,500 schools
- EduSat, Education Satellite - EduSat facilities are being used by schools across the nation to provide high speed internet connectivity

How to address capacity building of teachers?

Capacity building of teachers and administrators is increasingly being recognized in India as critical to the success or failure of any ICT initiative in educational eco system. If ICT is to be integrated organically in the teaching learning process then teachers and supervisors at the school level, as well as administrators in government departments will have to be brought on board.

However the focus has been on computer literacy rather than enabling the teacher to use ICT as a tool for course delivery. If today's "Smart Classes" have to be a success, then it is imperative that teachers have to be retrained on the new methods of course delivery.

Some of the most successful initiatives targeted towards teacher education and training are:

- Intel Teach Program - Provides in-service and pre-service teacher training to help teachers integrate technology in the class room. The program has been able to train more than 570,000 teachers across 14 states.
- Microsoft – 'Project Shiksha' - Instills ICT skills required to enhance the teaching learning process. It has successfully trained 200,000 government school teachers by June 2008
- Indira Gandhi National Open University- Provides a two year diploma course in primary education by using print material supplemented with radio and television programs

How to ensure quality education is being imparted?

While the initiatives taken towards delivery of quality education and capacity building of teacher through use of ICT is commendable, all such initiatives would fail if there is no proper monitoring and evaluation framework to assess the success of such initiatives. Sadly till today the monitoring and evaluation framework is weakly articulated in India and it focus on the success of the program rather than on knowledge or skill development of the student. While most government initiatives would track the GER it fails to track the skill development or knowledge enhancement of students.

ICT tools can be used for periodic assessment of learning of students and for providing mid course corrective actions. ICT tools should also be used for tracking the performance of the student over a period of time for mentoring and counselling purpose.

Investments in ICT for Schools

The central sponsored scheme "ICT@ Schools" had covered 53,000 schools since 2005-06. Under the 11th five year plan another 58,000 schools are planned to be covered. The estimated expenditure of the scheme is ₹ 6,926.13 crores for the 11th Five Year Plan. Funding will be on 75:25 sharing between centre and state government and 90:10 for North Eastern States. Recurring cost will be provided for a period of 5 years from the year of sanction. The aim is to quadruple the number of trained teachers, academicians and instructors so as to increase the GER to 20% by 2015.

Success Story

Delhi

The Department of Education in Delhi is tasked with the responsibility of formulating and implementing policies, programs, laws and regulation for the development of school education across the state. It also has a herculean task of managing around 1,000 schools with 40,000 staff to cater to about 1.1 million children. The department therefore has decided to collaborate with NGOs and corporates with Corporate Social Responsibility to leverage the use of ICT to achieve its objectives. ICT will be used to address all issues that have a direct or an indirect bearing on classroom teaching, students' performance, and accountability of teaching staff including office personnel. ICT interventions include computer-aided learning (CAL) in multimedia classrooms, admission of students and tracking their details, school information including geographical boundaries, student feedback, inspection of schools, assessment of classroom teaching, attendance of students online through various Web-based modules, continuous and comprehensive evaluation of students performance.

Key initiatives undertaken

- New Delhi Municipal Corporation (NDMC) entered into a contract with NIIT to provide ICT training in 29 municipal schools and covering 11,500 students
- NIIT in a joint venture with International Finance Corporation conducted an experiment on "Minimally Invasive Education" through their Hole in the Wall initiative where they provided computer access for gaming and multimedia to slum children
- Chalta Firta (literally meaning "moving") Schools are effectively mobile buses which have been fitted with a television screen and equipped with computers, multimedia facilities, a book library, blackboard, and toys which go around to the slum clusters of New Delhi where children do not have access to education
- Under the Computer Aided Learning component of the Sarba Shiksha Abhiyan, the Department has ensured that all government schools and around 400 Municipal Corporation Schools are equipped with CAL labs
- Indira Gandhi National Open University (IGNOU) is the nodal agency responsible for implementing the Distance Education Program for Sarba Shiksha Abhiyan. The DEP-SSA focuses on effective utilization of ICT for training teachers without dislocating them from their place of work
- In an effort to ensure that learning in schools is joyful, interesting, and meaningful, the Department of Education has introduced CALtoonZ, a specialized Computer-Aided Learning program (CALP), in all its schools.

Key Outcome

There has been a marked decrease in the dropout rates in all Delhi Government schools; however, the extent of the decrease is steeper in schools with CAL as compared with schools without CAL.

Rajasthan

The Department of Education, Government of Rajasthan, is responsible for the development of education in this state. There are over 13.8 million children enrolled in schools at the elementary level (between Classes I and VIII). The state has a high dropout rate, and the government has undertaken various measures to reduce the dropout rate and ensure that all children attend classes and stay in school. While the Directorate of Elementary Education is responsible for education from Class I to VIII, the Directorate of Secondary Education is responsible for Classes IX–XII.

Key initiatives undertaken:

- Various educational interventions like alternative schools, evening schools, bridge course, Shiksha Mitra Kendras, mobile schools, and other remedial teaching centers have been proposed and implemented to address the needs of girls, out-of-schools/never-enrolled children, dropouts, children with special needs, and children from SC/ST (Schedule Caste/Schedule Tribe) and other disadvantaged section of the society.
- Implemented flagship schemes like the Sarva Siksha Abhiyaan (SSA), Rashtriya Madhyamik Shiksha Abhiyaan (RMSA), and the ICT @ Schools of the Government of India.
- The government in addition has undertaken several programmes on Formal Elementary Education, Teachers Training, Alternative Education, CALPs, Research and Evaluation, Quality Monitoring Formats, Quality Assurance Programme, District Information System for Education, Remedial Teaching, School Water Sanitation & Hygiene Education cell (SWSHE).
- Launched Rajasthan Education Initiative (REI), in a public private partnership with Jordan Education Initiative for leveraging ICT for course delivery, improvement of learning levels and skill development.
- REI has launched Inter Education Initiative for capacity building of government teachers in 26 districts of the state
- American India Foundation, through its Digital Equalizer program, has been funding computers, internet access and training in 200 schools across 7 districts in the state.
- Azim Premji Foundation is a not-for-profit organizations focusing on providing quality education to government run 1134 upper primary schools in 32 districts in the state.
- Hole in the Wall Education Ltd. had planned installed 2 computers each in 200 schools in Jaipur in 2007 and also covered 3 districts of the state.

Key Outcome

In spite of the multitude schemes, the state due to its strong traditional outlook still continues to see low levels of literacy. While male literacy is above the national average, female literacy is around 10%

lower than the national average. The dropout rate for girls from Classes I to X was as high as 81% (2006–07) and for boys for the same period is 71%. Further, at the higher secondary levels (Grades XI–XII), the GER is as low as 22%.

The Rajasthan Education Initiative was a unique public private platform that guided the government's effort in improving education levels in the state from 2005 to 2008. However, after the initial success, the initiative has not been sustained in its vibrant form. Hole in the Wall Education Ltd. could only reach a target of 63 schools against 200 due to lack of infrastructure and adverse environmental conditions. Administrative delays and inadequate political will has also been a major roadblock in Rajasthan.

Himachal Pradesh

In Himachal Pradesh, NIIT was selected to impart computer literacy and computer aided learning to the students of upper primary government schools. A total of 282 government schools were covered by NIIT in the state.

The responsibilities of NIIT included:

- To impart computer education in Hindi or English as the medium of instruction as prescribed by the government for school concerned.
- To provide one teacher in each school to provide computer literacy to Classes 6th to 8th as per the syllabus prescribed and as amended from time to time.
- To provide one District Coordinator per district. HP has 12 Districts
- To design, print and supply of courseware to the students.
- To keep adequate stock of consumables like Floppies, Printer Ribbons, stationery and other material required for running the activities.
- To impart functional computer training to five teachers/officials every year and provide courseware to them in English.
- To impart training to school teachers in Computer Aided Learning (CAL) on the multimedia contents to be supplied by Himachal Pradesh Education Society cum Sarva Shiksha Abhiyan.

Key Outcome

GER has increased from 98.24% in 2003-04 to 115.4% in 2008-09, a substantial jump in just 5 years. Himachal Pradesh in spite of its hilly terrain has shown remarkable progress in enhancing the literacy levels of the state.

Challenges

While the ICT initiatives undertaken so far have experienced positive response from stakeholders in the education eco system; however the future is not without speed bumps. Key challenges to be tackled in future are:

- Infrastructure remains a critical bottleneck in India. This includes both IT and non IT infrastructure. Low levels of electrification and frequent power outages are cited as by far the most significant problem for effective use of ICTs in education in non urban areas. Couple this with low level of internet penetration in the country. Key constraints in developing adequate ICT infrastructure are:
  - Significant difference in access to connectivity & electricity between rural & urban areas
  - Lack of resources for maintenance and upkeep in rural areas
  - High cost of connectivity
  - Lack of institutional frameworks and robust implementation capacity
- Lack of quality instructional materials and applications and to train teachers and students to effectively integrate ICTs in their teaching learning practices remains the most important challenge.
- There is a need to ensure integration between stated policy objectives in the ICT and Education policies and initiatives, and administrative capacity of Education departments on the ground.
- Monitoring and evaluation strategies are typically weakly articulated and implemented in India. Further existing monitoring and evaluation strategies in Education initiatives are mostly focused on program evaluation and EMIS type tools, instead of being based on evaluation of learning levels of students.
- Teachers are not comfortable using ICT as a tool for delivery. Unless teachers realize that training will help them rather than pose a threat to their jobs they will continue to remain hesitant. The first step therefore is to get the teachers on board. Raising awareness, about use of ICT in education and improving their teaching efficiency could help in developing positive attitude toward the use of ICT in education among teachers.

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The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the growth of industry in India, partnering industry and government alike through advisory and consultative processes.

CII is a non-government, not-for-profit, industry led and industry managed organisation, playing a proactive role in India's development process. Founded over 116 years ago, it is India's premier business association, with a direct membership of over 8100 organisations from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 90,000 companies from around 400 national and regional sectoral associations.

CII catalyses change by working closely with government on policy issues, enhancing efficiency, competitiveness and expanding business opportunities for industry through a range of specialised services and global linkages. It also provides a platform for sectoral consensus building and networking. Major emphasis is laid on projecting a positive image of business, assisting industry to identify and execute corporate citizenship programmes. Partnerships with over 120 NGOs across the country carry forward our initiatives in integrated and inclusive development, which include health, education, livelihood, diversity management, skill development and water, to name a few.

CII has taken up the agenda of "Business for Livelihood" for the year 2011-12. This converges the fundamental themes of spreading growth to disadvantaged sections of society, building skills for meeting emerging economic compulsions, and fostering a climate of good governance. In line with this, CII is placing increased focus on Affirmative Action, Skills Development and Governance during the year.

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Designed by: PwC Brand & Communications, India