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Confederation of Indian Industry

Learning outcomes in school education— at the core of building a knowledge economy

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Foreword - CII

The education debate in India has moved from the need to ensure the provision of inputs like classrooms, teachers, toilets, and so on, to the importance of ensuring suitable learning outcomes. From a situation where the entire focus was on inputs, we have moved to one where the outcomes achieved as a result of those inputs have acquired significance. This is natural and welcome — like other countries across the world, having substantially addressed issues of access, we have turned our attention to the tricky question of quality.

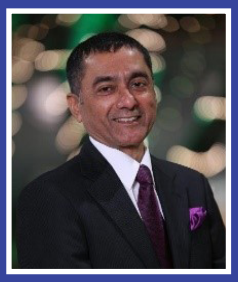
An important step towards achieving quality is the determination of unique learning outcomes and measuring student performance against them accurately to understand the extent to which they have been achieved. This understanding should in turn lead to changes in policy and practice to support improvement in classroom learning, creating a perpetual circle of value for the teacher, taught, and the nation at large.

In this background, the forthcoming CII Northern Region School Summit, "A Million Good Schools Now", is a timely event, and will provide stakeholders from across the country an opportunity to engage, share best practices, and learn from each other.

As a national mission, creating schools of outstanding quality is one that we should adopt wholeheartedly, and I commend CII for contributing to that process through the current summit.

I would also like to compliment KPMG, knowledge partners to the summit, for undertaking this study, the report of which is in your hands. As a report that highlights some of the crucial steps involved in the journey towards achieving quality education, this is an important contribution and will add value to the debate.

Many, if not most, of the jobs of tomorrow are yet to be conceptualised — building skills in our young people for jobs which are yet to be imagined is an impossible task. What is possible, however, is to build in them the skills that they will require to do many of those jobs – creativity, critical thinking, an ability to collaborate and work in teams, and communication skills, among others. School systems need to be nimble and flexible, adapting to these new realities in order to help children become better learners. We hope that the present discussion would in some small manner, add to the eventual realisation of that goal.



Amit Kaushik

Chairman,
CII School Summit 2018
CEO, Australian Council for Educational Research (India)

Foreword - KPMG

"A well-educated mind will always have more questions than answers"- Helen Keller

India is in the quest to become a knowledge economy on the fulcrum of a 'youth bulge' in its demography. School education needs to lay the foundation stone for this to mould the attitude, skills and critical abilities in students. Learning outcomes are a good measure of the quality of school education and should be the intended consequence of the efforts of the entire ecosystem. Persistent effort towards driving research, innovation, critical thinking and collaboration is fundamental to improving learning outcomes. In recent years, the theme, 'learning outcomes in school education' has drawn significant attention, as various studies and surveys measuring the learning outcomes have showed dismal country-wide performance. In recognition of the same, the recent government budget allocation to education focuses on improving learning outcomes, teacher training, and transition to digitisation.

In the present system, quality of education is measured by examination scores, enrolment rate and so on, overlooking students' real learning needs especially on an everyday basis in the classroom. Learning outcomes have been disconnected from the design of interventions due to a lack of realisation that students are the most critical cog in the wheel of education delivery. There is more emphasis on 'teaching' rather than 'learning' in the teaching-learning process.

This paper analyses the critical inputs into the education system which are levers of change. It brings perspective to the process of teaching and learning through cases in point and interventions that have previously had a transformative impact on learning outcomes. Our effort aims to reflect on the effective practices, given the various systemic and infrastructure constraints, and elicits practices that have had a critical impact in school education system.

Further, it aims to open a dialogue on the crucial requisites and approach towards the design of policies and programmes. Interventions aimed at community building, awareness and mindset transformation, and the understanding of a student's psychological needs are equally imperative in the effort towards creating an ecosystem, which intrinsically drives learning outcomes at the core of the teaching-learning process.

We, at KPMG, thank everyone who has helped us in bringing out this paper. We hope this triggers a new thinking across stakeholders to build a transformative approach towards building an innovative, knowledgeable, confident and compassionate new generation for India.

Narayanan Ramaswamy

Partner and Head,
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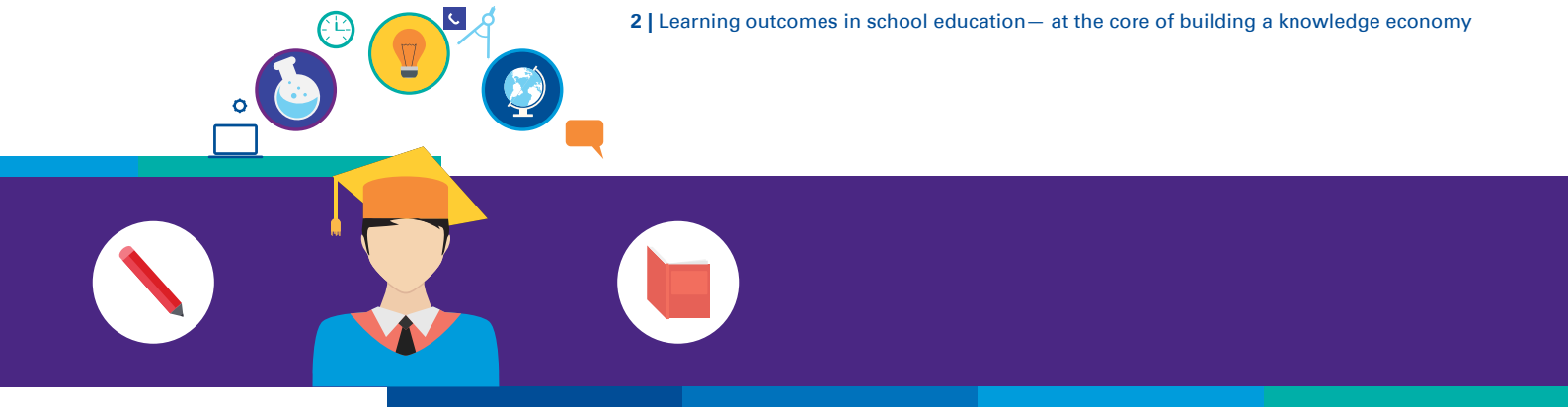
1 Introduction

Apart from adding value to our lives, education has an economic value as earning profiles increase with higher levels of education, which, in turn, boost productivity. High standards of education at the school level lead to better outcomes at the higher education stage, which facilitate the deployment of improved technologies yielding greater production. New technologies bring new sets of educational requirements. However, in order to deploy these technologies there is a need for sophistication in standards of education. Thus enters the anomaly in education—education does not operate on fixed terms with industry or the labour market. It is becoming increasingly difficult to anticipate the needs or technologies of the future rendering the contemporary curriculum inadequate and learned skills redundant in the near future.

Hence, the most that classrooms can achieve is drive learning outcomes to foster competencies which students can carry with them into the world of work such as the attitudes and abilities for deep understanding, skills to learn, unlearn and re-learn, higher order and critical thinking skills, and the ability for problem solving and decision making. Classrooms can create opportunities for real-life application, innovation, creativity and visualisation which will set the foundations for a life-long learning curve. Embedding result-oriented learning outcomes in the curriculum will enhance students' performance and prepare them for the job market. As per our interaction with employers, the critical skills that are considered while screening a prospective candidate include out-of-the-box thinking and innovation; collaboration across cultures, geographies and streams; and communication and expression. "Our organisation is always looking for candidates who approach problems innovatively, and are able to adapt to new technologies and maximise the use of it", says Bani Paintal Dhawan, Head of Education at Google India. As per Sachin Torne, Chief Officer at Tata Classedge , "There is a lack of articulation and communication skills in candidates". Hence, practical exposure and experiential learning across these domains are crucial to preparing individuals who will eventually enter the workforce.

Education is the key instrument for social and economic transformation, and the most important means of nation building. Lack of quality at the elementary stage of education makes for low efficiencies contributing to a twin effect, that of drop-out rates at the upper primary stage and low participation in secondary and higher secondary education; highlighting serious concerns for raising the quality and maintaining standards in schooling provisions. Improving learning outcomes is crucial for inclusive growth, and therefore, major focus should be on measuring and improving learning outcomes for all children, with a clear recognition that only increasing inputs (number of schools, classrooms, teachers and so on) will not be enough to ensure quality education for all. While adequate inputs and infrastructure are necessary for the proper functioning of schools, inputs will not automatically translate into effective teaching–learning processes or satisfactory learning outcomes, nor will a focus on pass percentages and examination scores.

What follows is that educational reform policies and programmes should emerge from one jointly held vision — how can curricula, pedagogies, educational technologies and classroom practices deliver effective learning in the classroom which is linked to the real world, resulting in higher order thinking skills and



abilities. Further, how can this vision respond to the diversity of learner groups, regional/social contexts and various stages/forms of human development, within the regulatory national policy framework?

Though dated by almost a decade, international test results of Programme for International Assessment (PISA) in 2009, the global study evaluated by the OECD[1] ranked us at the second last position on the basis of the performance of two Indian States, as compared to the performance of other countries. As India prepares to participate in PISA in 2021 with the backdrop of education reforms underway in the country, an objective reflection on the as-is situation would enable a high-level understanding, as well as help address expectations from the collective efforts being made. The following sections therefore attempt a mini narrative of education performance, insights from practitioners, practices, and finally offer a set of recommendations for both private and public schools and school systems.

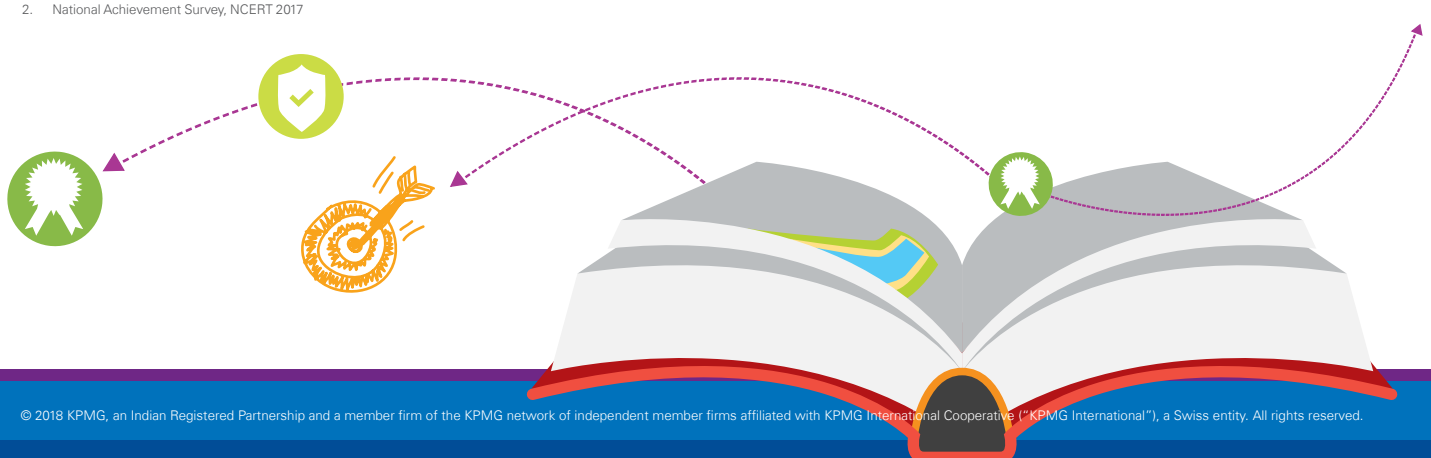
1.1 An overview of learning outcomes in the country

For many students failure is absolute – as what is now a well-established generalisation in our country, almost 40 per cent children dropout before they reach class 11. For many children failure is a fact, a lived reality, for even if they complete school, they pass out from school whether they learn anything or not (as was the finding of the ASER Beyond Basics survey, 2017, of youths in the age group 14-18). For almost all children a sense of failure endures in the most critical sense, as they fail to develop a capacity for learning, creating and understanding. And yet in what seems to be a travesty, they were all born with this faculty and made full use of it in the first two to three years of their lives – before they entered formal schooling.

A crucial milestone in the move towards quality education is the National Achievement Survey (NAS), which is conducted by National Council of Educational Research and Training (NCERT). NAS is the largest survey among school students, which was previously conducted every three years (since 2001-2002), and now conducted every year to assess the level of learning outcomes among students in classes three, five and eight for EVS, mathematics and languages. In 2017[2] , the assessment was conducted for 25, 00,000 students across 700 districts in India. Reportedly, the lowest performing outcomes in mathematics are to do with daily life problems using operations involving time, money, length, mass, capacity and estimation. In language, students fail to engage with textual/non-textual material with understanding, and show inability to decode print material in their environment. In science, students find difficulty in relating phenomena and process with cause and effect, and in constructing models using materials from their surroundings and explaining their working.

Pratham's ASER published annually since 2005 reveals similar findings related to learning outcomes of young people. As part of the Beyond Basics assessment conducted by ASER in 2017, it was found that those between the ages of 14 and 18 have low competency in handling literacy and numeracy skills in daily life. Moreover the void in language skills results in low ability for comprehension and thinking skills leading to poor outcomes in other subjects such as mathematics and science. The problem appears to be insurmountable when dealing with the challenge of a foreign language

1. Indian students rank second last in global test, Times of India , Hemali Chhapia, January, 2012
2. National Achievement Survey, NCERT 2017



like English, which is not transacted as a skill-based programme in a whole language approach.

Another finding of the report highlights that as students advance to the primary and secondary classes, the rate of enrolment and the learning level outcomes keep on decreasing, which brings us to an uncomfortable realisation: 'Attending school does not ensure learning'. The critical findings from the report show that in 2016, less than half of the students studying in class seven were able to solve class two comprehension, or numerical-based problems. It was observed that the number of students enrolled in class eight in 2011–12 were close to 19 million, and as they progressed to higher classes, the enrolment rate kept declining. It declined to 17.6 million in 2013–14 (for class 10) and it further fell to 12.2 million in 2015–16 (for class 12). The low learning levels of students and the decline in enrolments reveal multiple loopholes that need to be addressed to ensure a robust outcome of the concerted efforts of various stakeholders in the school education system.

1.2 Comparative overview of states (based on NAS, 2017)

Figure 1 suggests declining learning gains across states as students move to higher classes. In class three, the performance of students is better in language than mathematics and EVS, but results of class eight indicate better performance of students in EVS than mathematics and languages. Five out of seven north-eastern states and five of seven union territories (UTs) have fallen in the bottom performing category in the survey.
Table 1 indicates a list of factors and interventions in a few high, mid and low performing states to analyse plausible reasons for the outcome on the survey.

Interventions aimed at increasing access and awareness of quality education and constant monitoring of efforts are plausible reasons for states such as Gujarat and Rajasthan ranking at the top. In Karnataka, there is a substantial focus on continuous monitoring and evaluation for corrective action and personalised learning for both students and teachers. Efforts have been made to bridge the socio-economic divide in education in these states.

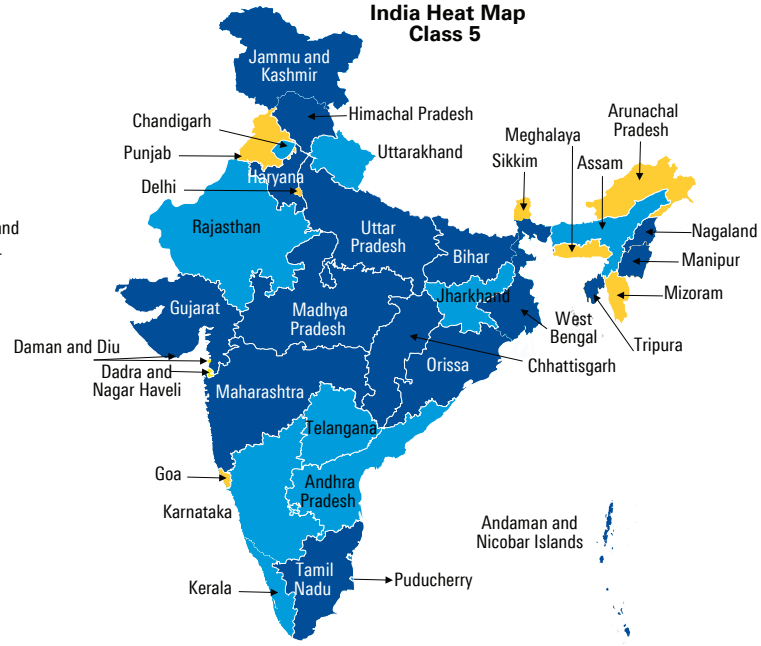
In Chhattisgarh, efforts have been made to increase access to marginalised communities and introduce technology in order to provide access to quality education. In the north-eastern states, regional disparities in educational development and widening gap between financial allocations and outcomes raise important questions on the link between efficient resource allocation and school effectiveness. In Assam, 70 per cent schools meet the CTR norms but only 34 per cent schools meet the PTR norms. In case of Manipur, PTR is high (92.6 per cent) but CTR is very low at 36.1 per cent[3]. Tripura has high PTR but low CTR. The bulk of the expenditure on education is being spent on maintaining capital than producing capital[4] , which again points towards an input-driven approach.

3. Annual Status of Education Report, ASER, Pratham, 2014
4. Recent reforms in elementary education in north-east region states of India through RTE act—Achievement and unfinished tasks, Department of commerce , Ruma Dey

Figure 1: Performance of Indian states on NAS 2017

Learning Outcomes average (Class 3)	Color
30-39	
40-49	
50-59	
60-69	
70-79	

Learning Outcomes average (Class 5)	Color
30-39	
40-49	
50-59	
60-69	
70-79	

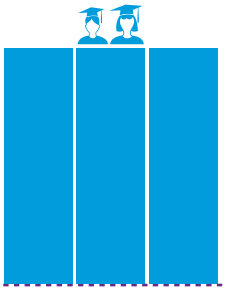


Learning Outcomes average (Class 8)	Color
30-39	
40-49	
50-59	
60-69	
70-79	

Table 1: Key interventions in select high, mid and low performing states (based on the results of NAS 2017)

Performance on NAS'17[5]	State	Key characteristics and recent interventions[6]
High 	Rajasthan	• Emphasis on easy access to high quality secondary education to every child in the state • One adarsh school (model school) in all 9,894 Gram Panchayats, which would be catalysts of education reform providing the right mentorship and support to other schools in vicinity and improving education service delivery in the entire village. To support this vision, local governance structures are being streamlined by the appointment of panchayat elementary education officer in every Gram Panchayat. Along with school education, the state is integrating anganwadis across these secondary schools for strengthening of pre-primary education in the Gram Panchayat[7] • The state has adopted Continuous Comprehensive Evaluation (CCE) as a pedagogical tool and carefully scaled up its adoption in schools. This has ensured that ongoing evaluation was able to address gaps in learning.
High 	Karnataka[8]	• **Continuous tracking of progress:** To track enrolment, attendance and learning of children in primary schools, the state has created an integrated database called Student Achievement Tracking System (SATS). It integrates all the government databases and allots every school and student a unique ID number • **State achievement survey:** The census-based survey assesses the learning of 36, 00,000 students in language, mathematics and social sciences. Students studying in classes four to nine of all government and government-aided schools of the state are assessed during the survey. It is conducted to evaluate how much each student has learnt. So far, eight lakh children have been identified and provided with remedial assistance • **Teacher training programme:** To enhance the quality of education in the classroom, Guruchetna—a customised teacher training programme—has been introduced that allows teachers to choose modules based on their interest and needs. The state government has roped in experts as resource persons for the successful implementation of the programme • **Activity-based learning:** Nali Kali is an activity-based learning model, which enables students to learn according to their capabilities rather than what is prescribed in the grade-level textbook. It aims to make learning fun and meaningful for children • **Making schools safe:** Karnataka is the first state in the country to come up with a comprehensive policy to ensure safety of school children. The Child Protection Policy (CPP) of the state is developed as per the guidelines issued by UNICEF and NIMHANS, Bengaluru. It acts as a guiding document for all educational institutions for safety of students

5. Based on performance on National Achievement Survey, NCERT 2017
6. Compiled from state education department websites
7. Education Vision 2020, Rajasthan Government Report
8. Karnataka Goes Innovative to Improve Learning Experience, Digital Learning magazine, March,2018

Mid 	Gujarat	• **Gunotsav:** This is an appraisal system for government-funded schools to ensure that each school gets what it needs in order to improve quality. Each school assesses itself on prescribed parameters • **Extra coaching programmes:** These are three-month programmes with four periodic assessments, built-in formative evaluation that would help teachers monitor the progress of each child. Children are grouped according to their competency, irrespective of classes that they belonged to. Activity-based approach, using existing teaching learning material is utilised. There is involvement of parents through three PTA meetings a year, and visiting students who have been absent for three consecutive days. Head teachers guide volunteer teachers in the programme. There is clear role definition and monitoring through Cluster Resource Centre (CRC) and Block Resource Centre (BRC) • **Remedial teaching** to enhance student performance
Mid	West Bengal	• **Shikshashree** and **Kanyashree** are schemes that provide financial aid and conditional cash transfers to Scheduled Caste scholars and girls to pursue secondary education[9] • Introduction of books in first language, which is Bengali • Equal emphasis on elementary, primary and secondary education in the budget • Lack of infrastructure, drinking water, toilet facilities and electricity which in turn lead to fall in the interest of the student to come to school
Mid	Chhattisgarh	• Schemes like Dakhila Abhiyan and porta cabins are aimed at increasing access to students from marginalised communities • Under Muskaan Pustakalya Yojna, free of cost/cheap books/audio books are provided to students • Under the introduction to basic technology programme, rural students in classes eight, nine and 10 are exposed to a wide range of vocational and technical opportunities and skills. Under the Sampark Smart Class Programme, basic mathematics and English capabilities are inculcated in early classes via audio, video and 3D learning aids • Dormitories for migrant families and Aastha Gurukul for orphans are residential facilities aimed at improving access to education
Low 	North-eastern states	• High urban–rural divide has kept teachers from taking up jobs in the remote areas • High dropouts at the elementary level • Lack of resources and low pay scales for teachers • Lack of infrastructure and extremely high pupil teacher ratio and classroom teacher ratio • Socio-economic disparity and gender gap in education • Lack of higher education avenues may lead to lower motivation levels and lower input in terms of teacher quality and parental support.

9. Educational Schemes of West Bengal, The Indian Iris, Shivam Shukla, April,2018

2 Where does India stand in the continuum of learning?

The East Asian economies have consistently outperformed other countries in education rankings, especially noted in the PISA test scores[1]. Considerable features of schooling systems in these countries include placing a high value on the teaching profession. Teaching is looked at as a full-time profession, with a career path, reasonable salaries and professional development opportunities. The mindset in these countries position education and educational opportunities appropriately, compelling stakeholders to treat the teaching–learning process as a result-oriented framework.

In Finland, the concept of examinations is introduced at the age of 16[2]. This allows freedom of learning without limiting them to a syllabus. Further, in each class, a teaching assistant supports the teacher, and also provides extra attention to low performing students. The profession attracts candidates from leading institutions because of the steady and speedy progression in average incomes.

It is imperative that the education practice in India focuses on research and independent and original thinking. Taking a cue from Howard Gardner's Theory of multiple intelligences, constructing learning experiences using unique learning styles, multi-sensorial learning objects and environments, and an inquiry-oriented approach to explore and test hypotheses to draw conclusions would promote a scientific temper. Such a practice would enable dialogue, and therefore communication, collaboration and critical and creative thinking - the essential 4Cs of the 21st century[3].

According to Usha Menon, Founder of Jodo Gyan, and an organisation that has developed innovative methods of learning in mathematics, "Learning outcomes need to be defined keeping in mind the child's psychology of learning". She adds, "Curriculum needs to be scientifically built up, and there should be a natural progression towards concepts".

Maya Menon, Director of Teacher Foundation, a teacher development organisation, acknowledges, "Well-qualified teachers take up the profession, however the system does not allow them to take risks. Instead of supporting teachers to undertake a diagnostic and improve results in the classroom, they are harangued. There is no follow-up of capacity building efforts or training programmes". The challenge of systemic pushback results in a slow deterioration of talent , low motivation and diluted aspirations.

2.1 Assessment of learning practices

Learner beliefs, what learners need to know, models of learning and learning styles, processes and relationships in schools will be impacted and determined by forces of change in the world of work, which are political, economic and work, technological, social, cultural and environmental. Acknowledging the impact of these factors poses certain questions:

1. What kind of education is required to equip children to overcome disadvantages of the social divide, and to learn to be environmentally-responsive citizens?
2. If "student-hood has become a time to prepare more economically useful adults", how do schools help students improve their employment prospects by focusing on skills and abilities to enhance and apply learning instead of just improving literacy or bettering prospects of qualifications?
3. How do students use textbooks and information such that it becomes knowledge? How do schools help students make connections and interrelations given this vast body of knowledge systems for knowledge creation?
4. If 'technology is value-neutral' how do schools use technology to determine benefits for education and schooling systems? How do we define technology — do we consider other tools in the tool room apart from computers and the internet?
5. Can government schools in rural contexts provide platforms to widen international, cross-cultural, and economic perspectives for a global outlook?

1. Why Does India Refuse to Participate in Global Education Rankings? , The Diplomat, K.S. Venkatachalam, January 2017
2. Finland's education ambassador spreads the word, The Guardian , Peter Wilby, July,2013
3. The 4Cs are skills identified by the Partnership for 21st Century Skills (P21) as critical components of education delivery

This line of questioning pointed us to the larger education community, and we spoke with some stakeholders – teachers, principals, teacher–development organisations, technology providers and government functionaries on the thinking on curriculum design pedagogy, infrastructure, delivery tools, teacher training and so on.

The touch points of our discussions such as uniform and continuous data collection for informed decision-making; awareness generation and regular follow-up of interventions by the government, civil society and organisations; contextualisation and progression of the curriculum and training programmes, efforts towards community building indicate gaps in the present ecosystem. The challenges raised provide the following perspectives:

1. Mindset and attitude towards the teaching-learning process

As students, schools and parents alike try to secure a place at every stage of the massive churn, there is a need to reflect on the societal perceptions of learning. A narrow view of the educational output, rigid expectations and 'banking concept of learning' (to capitalise on the value of teaching process, student minds are treated like bank vaults, which are meant to receive knowledge inputs) are the main drivers in the race for scoring top marks in examinations.

2. Issues with the curriculum

Education is historically organised to address classes and not individuals, and we see this in the 'cells and bells' and 'chalk and talk' legacy in the way a majority of schools are designed, rooms are organised, and lessons are conducted with the sole aim being the transfer of knowledge from one (teacher) to many (student group). The whole process is not empirically customised to individual learning styles, levels and aptitudes. The curriculum is compartmentalised with a lack of interdisciplinary connect and a lack of connections with life. Some teachers and stakeholders also point to the drastic transition in curriculum in upper secondary classes and from vernacular to English medium. According to Manvi Aggarwal, fellow at Teach for India, "Having taught grades eight and nine in my first year of fellowship, I realised that there is a massive jump in the curriculum of the two classes. Where eighth is low on content, ninth class is a sudden blast where the students are unable to cope up with a heavy content and syllabus. It can be improved by making ninth grade less-content oriented and more skill-based."

Prescribed books in the vernacular medium may need revision to reflect the changing 'glocal' environment and expectations from the educational output. In recognition of the fact, Smrutiranjan Mohanty, OSD School Education Department, West Bengal acknowledges, "Different councils of educational research and training need to come together for this purpose".

The ongoing dialogue about the bifurcation of the curriculum and assessments into 'basic' and 'advanced' levels, especially in upper secondary classes hence takes precedence for teachers in the classroom. According to Dr. Veer Pal Singh, Professor ESD at NCERT, "Learning is spiral in nature and not linear. The repetition of chapters across grades for the build-up of a concept, adds up to the vastness of the curriculum".

Rhetorically speaking how often does one challenge a default setting and find a fault in the default? In a response to this, we need to ask another question — what is the shift that teachers will need to make? Today, there is a whole movement that is looking at an out-of-the-box thinking in classroom practice and believes that the real teacher doesn't teach how to answer a question but imparts abilities to 'how to question an answer'. Ameeta Wattal, Principal of Springdales School Pusa Road, New Delhi emphasises on the motto, "Question is the quest". She adds, "There should be an empirical movement towards learning guided by a systemic understanding of yourself and the society at large". Classrooms need to give agency to students to inquire

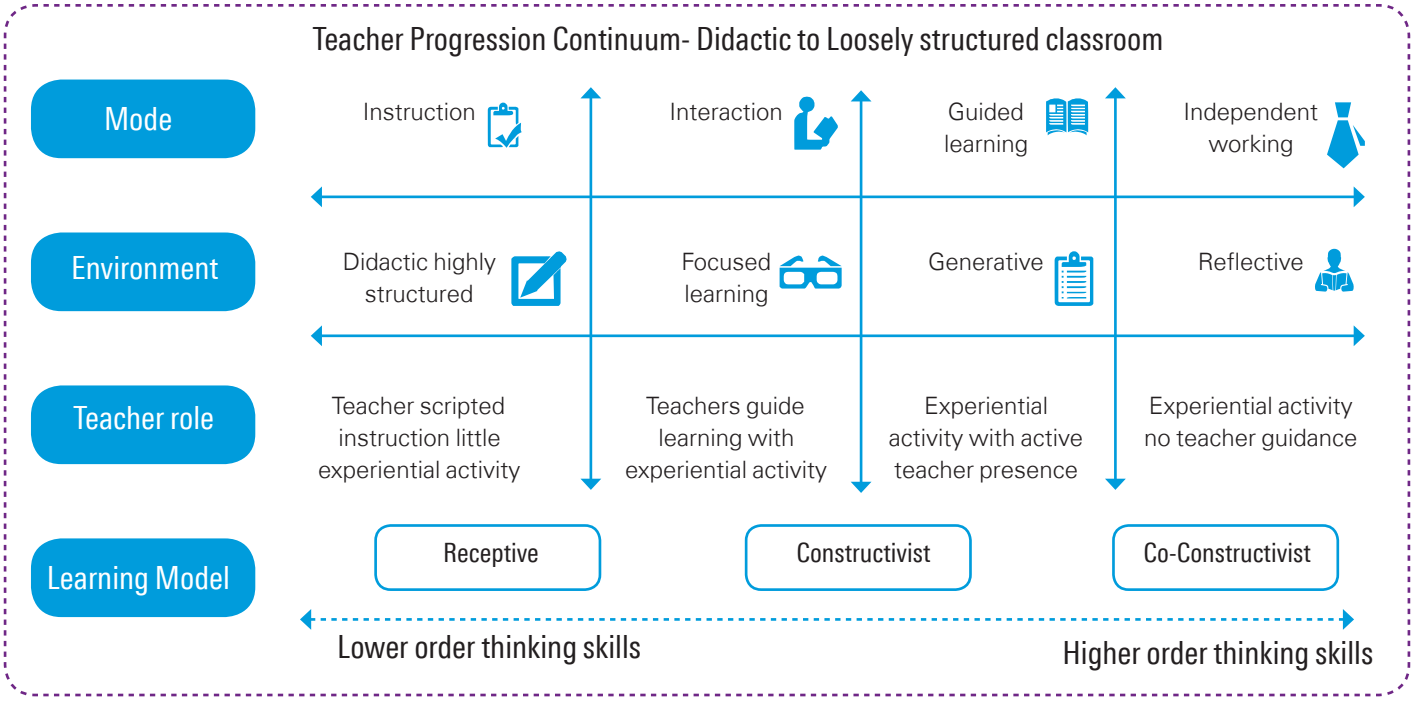
and lead, as teachers and students are co-creators of content. Quoting Adam Grant in Originals, "The hallmark of originality is rejecting the default and exploring whether a better option exists…(and) the starting point is curiosity" sheds light on the importance of inquiry oriented learning.

3. Building teachers' capacity and accountability

Teachers are the most fundamental agents of change in transforming the teaching and learning process in the classroom leading to student achievement and learning outcomes. Teacher effectiveness can be improved by the judicious use of professional development programmes, tools and technologies, and careful design of learning infrastructure, curriculum and pedagogy. Cognitive learning processes for teachers are a must so as to achieve learning outcomes in the form of changed perceptions about their practice and change in behaviour. Teachers should concentrate on facilitating communication and dialogue, providing individual support, using alternative methods of classroom organisation by alternating between whole class approach, group working to working in pairs and more. To be able to do that, teachers need to recognise the different aspects of the teaching-learning process and possess the knowledge and skills to understand how these domains work, in order to accommodate a pendulum shift in the continuum of the teaching learning process; as illustrated in the figure below .

- People learn best when they use **perceptual learning styles**
- Perceptual learning styles are sensory based
- The more **sensory channels** involved better they learn
- Least effective method is through verbal symbols
- Most effective method is **through direct purposeful experiences** which are closest to real life
- Action learning can achieve **up-to 90% retention**
- **Instructional activities** should build more upon real life connections
- Knowledge is expanding and moves from **concrete operational to abstraction**

Adapted from E.Dale's cone of learning, NY Dryden Press, 1969



Loveleen Kacker, CEO of Tech Mahindra Foundation, spoke on the issue of sensitisation in government schools, "Teachers needs to be sensitised about aspects such as dealing with socio-economic and cultural difference in classrooms, the impact of their intervention and the importance of building a 'thinking community of learners'. Re-learning is important for teachers". Furthermore, emphasis of accountability and follow-up for learning outcomes should be of paramount importance to them.

The entire community, schools and education ecosystem need to support teachers in driving changes in the classroom. Lessons from classroom practice, in turn, should inform the design of the capacity building programmes. Some longitudinal studies[4] reveal the core shortcomings of professional development programmes. These are usually disconnected from the everyday practice of teaching, too generic and unrelated to the curriculum or to the specific instructional problems teachers face. The programmes are also infrequent and implemented as a one-shot event, as opposed to gradual, regular programmes building on the learning from previous training programmes.

4. Blending in technology and infrastructure as catalysts for higher learning levels

Building future-ready schools would mean being cognisant of the disruptive technological forces shaping the future. The world today no longer rewards people just for what they know. What matters is actually what they can do with what they know. Thought leaders today realise that the key differentiator in education is ways of knowing and learning to learn. Technology provides the key to do this. As is the observed trend, mobile applications are using artificial intelligence, and going by the trend, it is assumed that in the next couple of years, many applications will be driven by artificial intelligence. Given this appreciation, there is a need to predicate principles of technology-driven pedagogy on the contemporary tools of digital interface, using design thinking for student achievement. Hence, investment in blended solutions that promise radical learning outcomes, though with reduced costs are the need of the hour[5]. Kevin Kelly author of the 'Inevitable' has also signalled 12 technological forces that will shape things in the future[6].

Looking at this changing outlook, besides the general facilities which are required to improve the learning level, most of the public schools lack critical facilities such as simulated environments and laboratories, personalised learning, and digital technological tools and know-how.

In addition, pertinent issues with the implementation of Information and Communication Technology (ICT) at schools include lack of government vision and a sound curriculum to implement an ICT programme and inability of teachers to effectively transact the curriculum using the ICT resources.

Using adaptive learning technology tools, classrooms can build in assessments which provide personalised learning paths. Learning algorithms can help teachers assess the learning levels of students with remediation paths and knowledge graphs for desired learning outcomes. Levels of complexity can be built in by generating questions tagged on Bloom's Taxonomy, with varying difficulty levels and interdependency between various concepts and sub-concepts. The Bloom's Taxonomy was created in 1956 by educational psychologist Dr Benjamin Bloom in order to promote higher forms of thinking in education over rote learning. The six levels of learning include remembering, understanding, applying, analysing, evaluation and creating. These facets of learning span across three domains including cognitive or mental skills, affective or emotional areas and psychomotor skills[7].

4. Sinha, S., Banerji, R., Wadhwa, W., 2016, Teacher performance in Bihar, India: implications for education (English), Directions in development; human development. Washington, D.C. : World Bank Group, http://documents.worldbank.org/curated/en/484381467993218648/Teacher-performance-in-Bihar-India-implications-for-education
5. Prof Crystal Lim, National University of Singapore, Global Education Investing by Pearson Affordable Learning Fund and Bo Clips articulated similar thoughts at the Global Education Hotspots: Asia's burgeoning Education market Conference in Singapore, 2017
6. In Kelly's book 'Inevitable', he explains how a few long term accelerating forces will change the way we buy, work, learn, and communicate. Embracing these relationships with technology will help bring forth maximum benefit.
7. Bloom's Taxonomy by Patricia Armstrong, former Assistant Director, Center for Teaching

However, technology solutions need to be designed and integrated contextually since there are no uniform solutions. There is a need for constant upgrade of content. Bani Paintal Dhawan from Google India acknowledges, "Technology has played a crucial role in taking quality education to remote classrooms, and however it is imperative that teachers are empowered to use the correct tools and technological aids to transact in the classroom. Each state has its own challenges and trajectory, hence there is a need for unique solutions".

5. Personalised learning and remediation

Many interventions aim at grouping students according to learning levels and remedial efforts to enhance a student's understanding. Adaptive learning tools also enhance personalised learning for students. These interventions aim to break the rigid distinction of grouping students according to age and classes and allow learning at the right level.

Efforts made by organisations such as Education Initiatives in this area include creating a learning product Mindspark for mathematics and languages which uses data-driven adaptive algorithm to personalise the learning process for each child[8]. The product recognises behavioural traits of a user, and incorporates rewards and games with the regular lessons in order to maximise their learning outcomes.

6. Systemic evolution

Our research pointed towards a loss of motivation among teachers due to systemic rigidity and lack of risk-taking abilities. There is a trickledown effect from the district to the school management levels and ultimately to the teachers in the classroom, thus hindering a 'creation-led environment'. This further leads to an emphasis on fulfilment of short-term goals rather than long-term learning gains for students. The focus on long-term learning and end-results over inputs will drive a student's learning levels.

Further, there needs to be a concerted effort towards constant and symmetric data collection across quantifiable metrics for each intervention across states. According to Smrutiranjan Mohanty, OSD Department of School Education, Government of West Bengal, "Currently, there are various levels of data collection because of which we have multiple database, which may not be the same always, hence decision-making may vary too. Policies and inferences are made from those databases whose source need not be the same". All stakeholders need to be on-boarded and sensitised about the need and purpose of such data collection to improve transparency and authenticity. This will give a thrust to data-driven decision-making.

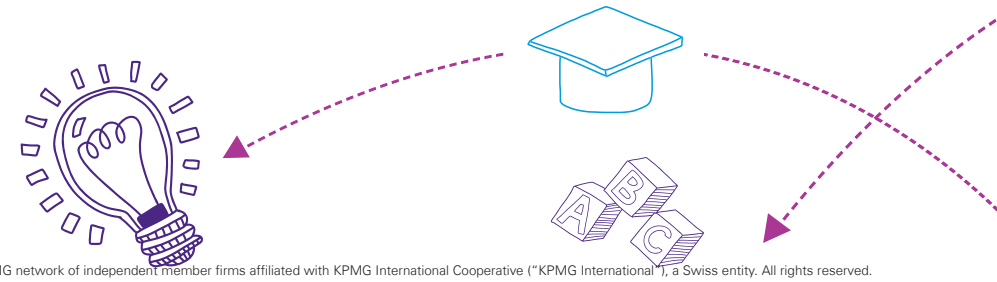
Awareness about interventions and resources need to be generated in a systematic and uniform manner, so as to apprise all stakeholders. Regular feedback and capacity building efforts are a must to fully maximise these efforts.

7. Data-driven decision making from the micro to macro level

According to Anit Cherian, senior research fellow at ACER, "Schools often do not use a data-driven approach while examining issues and finding solutions. They may often not reflect on existing practices, monitor to collect data and have the bandwidth to appropriately use this data to guide decisions." Data-driven decision-making is imperative to continuously improvise practices and interventions. This needs to begin in the classroom in the form of analysis of assessments, behavioural trends and competencies, and continue up till the state and Centre level in the form of uniform data collection and analysis.

2.2 Assessment of learning policies

Learning outcomes are not only a measure of student skills and competencies but also a marker of the efficiency of inputs that underpin most of the policy making and resultant practices in school education. Our interactions with key stakeholders have thrown light on important facets of recent policies and government initiatives. Some of the roadblocks with respect to the interventions have been discussed in this section.



8. Website: www.ei-india.com/what-is-mindspark, accessed in April 2018

1. The debate on No Detention Policy

The No Detention Policy (NDP) aims at creating a learning environment for students without any fear of failing in the exams up till class eight. However, Loveleen Kacker from Tech Mahindra Foundation highlights, "There is an attitude of indifference among students in the absence of incentives". The Government of West Bengal argues that adequate safeguards should be built into NDP such that dropouts don't increase. Some other fears shared by stakeholders is that teachers are not motivated enough to teach the students, and do not employ the best of their skills when they know that each student would be promoted to the next class, irrespective of their quality of teaching[9]. However, there would be weighted concerns on both sides of the argument whether to have a no detention policy or not. There were motivations as to why this policy came into existence supported with some good practices. It would be useful to analyse the reasons with some evidence-based research, for its reported 'failure', in order to resolve this impasse, and could also pave the way to understand and solve the problems the policy created in its wake.

2. Data-driven decision-making through Shalakosh

The current process of collation, tracking and processing of data needs to be rationalised and streamlined to minimise the utilisation of critical time of teachers by increasing the efficiency of the process. Apart from teaching, election, census and survey, administrative tasks are not recorded in the school books. Another major issue is that the data on health of students is not captured properly. Alignment of the platform for real-time tracking and monitoring and data-driven process management and decision-making will be a crucial breakthrough for future interventions.

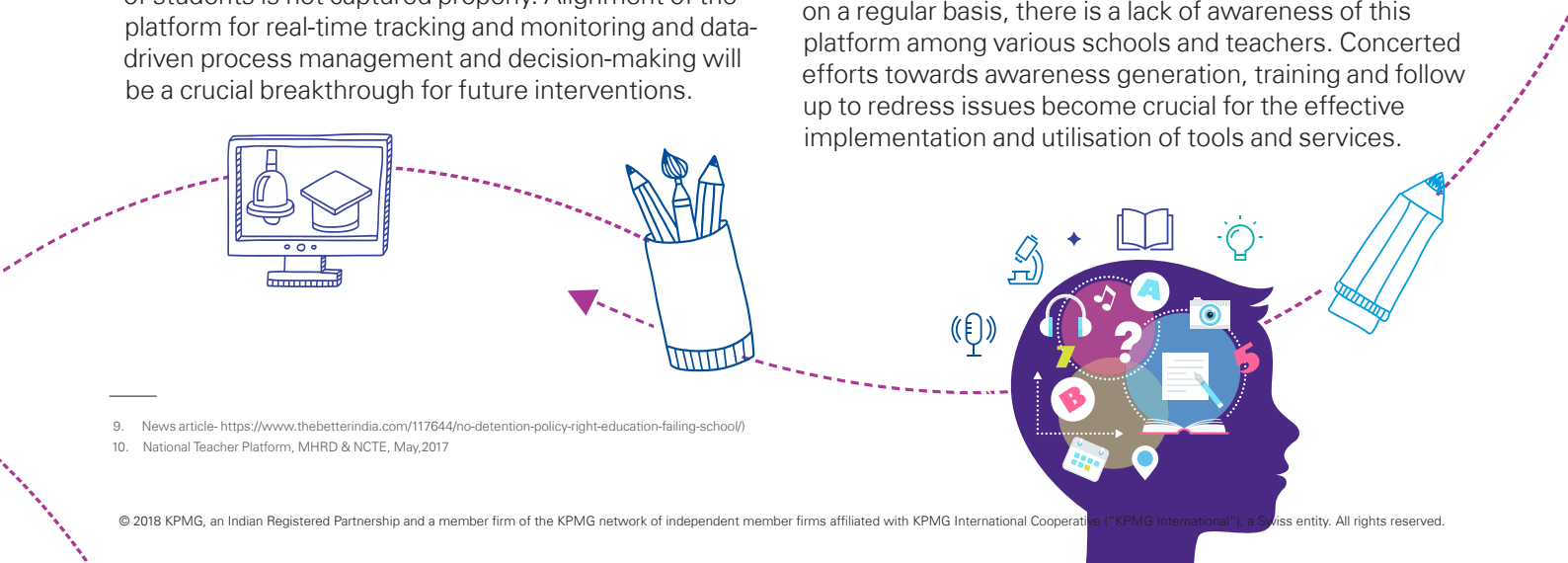
3. Burgeoning role of SCERTs and NCTE to align with contextual needs of the states

The National Council of Educational Research and Training (NCERT) has field offices in different states and union territories. State Council of Educational Research and Training (SCERT) is one of these offices. It is imperative to understand the role of SCERT in providing context and understanding the needs of the curriculum and teacher development and the handholding support with practical application of training delivered.

Similarly, National Council for Teacher Education (NCTE) is a statutory body of Indian government set up under the National Council for Teacher Education Act, 1993. The major function of the body is to formally oversee standards, procedures and processes in the Indian education system. Despite the fruitful functioning of the body in the field of education, it is facing obstacles in maintaining the standards of teacher education and hindering the rise in the number of teacher development and education bodies in the country because of lack of coordination with the state authorities, which does not allow them to know about the on-ground realities of capacity building of teachers.

4. National Teacher Platform

The Ministry of Human Resource Development, Government of India has built a National Teacher Platform to advance the potential of technology to aid teachers in India[10]. The National Teacher Platform is a resource tool that will be available for use by all teachers, educationists, academics, administrators, governments, NGOs and others in the field of education across the country. Although this can prove to be a vital platform for collaboration and capacity building of the teachers on a regular basis, there is a lack of awareness of this platform among various schools and teachers. Concerted efforts towards awareness generation, training and follow up to redress issues become crucial for the effective implementation and utilisation of tools and services.



9. News article- https://www.thebetterindia.com/117644/no-detention-policy-right-education-failing-school/)
10. National Teacher Platform, MHRD & NCTE, May,2017

3 Predictors of learning outcomes in the classroom

Common predictors of learning outcomes in the classroom and noteworthy interventions which have had a positive impact in the classroom in other countries and some states in India have been outlined in this section.

1. Community building and the voice of parents: The progress of students' academic development depends on effective participation from parents and school authorities. Active involvement of parents and the home environment is an influencer of educational output. "Schools face the challenge of lack of teaching and non-teaching staff, infrastructure, resources and/or knowledge of how to use existing resources. But failure to understand effective pedagogy and the mindset of teachers towards students and their learning is a big problem. The lack of a supportive environment at home also hampers the learning outcomes and stops teachers from collaborating with the parents", says Shreya Samant, School and Community Engagement Associate at Teach for India (TFI).

Case study:

Stronger parent community in some districts has led to better student performance in classrooms

In Karnataka, northern districts are educationally forward because there is a strong parent community. This is because when people start asking questions, the accountability of schools increases. The role of the SMCs is crucial in monitoring the performance of schools. Hence, it is imperative that awareness and mobilisation efforts for its members help build capacity to take up the role as a monitoring body.

2. Capacity building of teachers: Teachers play a critical role in the lives of students as they are responsible for their intellectual and moral development. There is an urgent need to guide teacher practice. Teachers need to have access to latest tools and technology, and be upskilled at regular intervals, in order to effectively use them. There is a need to build the capacity of teachers which will equip them with the quintessential skills to impact knowledge, skills, attitudes and behaviour in their students.

Teaching is an isolationist practice, not coded in rules like some other professions, and this is both an opportunity for success, and a recipe for low performance. While theories of learning give useful cues for teacher practice, they may not be followed. How closely they are bonded with practitioners' appreciation and practice both in government and private schools is a grey area. For example, social environment theories, specifically Brofenbrenner's work on the ecological structure of the educational environment which can inform how the child's environment, could contribute to the learning experience; or Vygotsky's Zone of proximal development holds valuable codes for teachers to mould themselves as a facilitator through guided learning, scaffolding techniques and peer learning. Cognitive development

Case study:

Training efforts in Saudi Arabia

The CfBT (Confederation for British Teachers) Education Trust in Saudi Arabia ensured training of 25,000 new teachers and 3,000 supervisors every year. Inclusion of international and local consultants expedited the delivery of the programme.

Some important initiatives taken by the trust were showing videos to teachers based on best practice, digital videos from leading figures from the world of education, and preparing a communication strategy to promote the programme among all stakeholders in Saudi Arabia including people from the Ministry of Education, teachers, school principals and the general public.

Source: *CfBT Teacher Training In Saudi Arabia, CfBT Education Trust, 2013*

theories like Piaget's work in developing structures for primary education involving cognitive conflict and accommodation, notion of discovery and readiness, all connectors in the constructivism approach, can modify learning experiences for students. The whole language approach — Thich Nhat Hanh's 'wholeness' of the learner can help curate effective learning paths in language learning especially for English language learning[1].

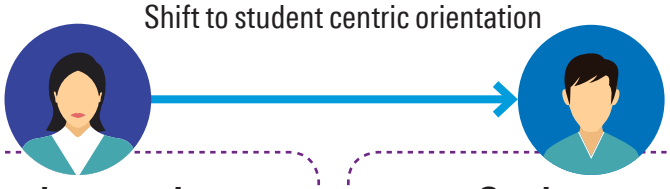
3. Understanding a student's mindset and behavioural patterns: Teaching more than the prescribed number of students in one classroom has become an impossible task for many educators. Even a handful of students with emotional or behavioural issues present challenges, as their disruptive or negative behaviour can stall the smooth functioning among a class of 40. Hence, for effective learning to take place, understanding how students consider their academic and social environment is important. Cochran-Smith (2004)[2] pointed out that personal knowledge of students will result in an effective and responsive curriculum in the classroom.

4. Relevant curriculum and pedagogy: Australian Council for Education Research (ACER) has pointed out that teaching is still considered as delivery of textbook content in the classroom. The majority of teachers, focus on the completion of the syllabus instead of integration of varied principles of pedagogy, which would deepen student understanding and engagement. Hence, it is becoming increasingly important to adopt a student-centric approach.

Some predictors of learning outcomes

- Effective lesson plans for unlocking learning blocks, creating learning triggers and authentic resources, and tightly aligned assessments
- Pedagogical techniques blended with domain competency, collaborative teaching, self/peer learning, flipped classrooms and blended learning
- Transdisciplinary inquiry tools and abilities for building fundamental concepts
- Creating interconnected learning eco-system in school by integrating curricular and co-curricular, designing integrated projects

Shift to student centric orientation



Teacher centric	Student centric
Organised around disciplines	Organised multidisciplinary
Group learning	Individualised learning
Classrooms	Diverse learning space
Didactic- Instruction	Interactive-Experiential
Confrontation	Cooperation
Local	Global- Glocal

Source: *Adapted from Kelvin Trimper & Andrew Gehling, Designing Sustainable Education Services for Communities*

1. The whole language approach stresses on the importance of children thinking about their (take it learning theories) thinking, and making sense of skills as opposed to memorising. The whole language approach to reading instruction focuses on children making important connections between reading and real life.
2. Cochran-Smith, M., Davis, D., & Fries, M. K. (2004). Multicultural teacher education: Research, practice and policy. In J. A. Banks (Ed.), Handbook of research on multicultural education (pp. 931-978). San Francisco, C.A.: Jossey-Bass.

5. Infrastructure and technology: The lack of resources, facilities and infrastructure hinders the implementation of several plans. Teachers in schools think that they are overburdened with other administrative work which drains them and reduces productivity. Due to inadequate infrastructure facilities, students do not get proper seating arrangement, and as a result the class is disrupted due to such reasons. Few principals believe this is one of the major reasons for learning outcomes to fall below the prescribed standards as students do not have the motivation to attend classes.

Possibilities with ICT are limitless, coupled with the right mindset. Technology has helped address inequality in education and build concepts which are difficult to visualise through simulations and get exposure to real life experts through content videos.

> “I do feel that digital classrooms are effective in improving learning outcomes, especially in elementary grades where students learn faster when they have an audio-visual learning instead of the classic teaching method. I used videos from online videos to teach phonics to my students from classes two and three and saw a huge improvement in their reading comprehension levels and in their speaking and listening of the English language. But even for that to truly work, the teacher needs to work on some basics and then move on to a tech-based class —— Shreya Samant Associate, City School and Community Engagement”

Around 100,000 schools have been covered under the ICT@Schools scheme[3]. An evaluation study of ICT implementation in 2014 indicates that (i) states lack a vision and a sound curriculum to implement an ICT programme (ii) teachers in several states are unable to effectively transact the curriculum using the ICT resources and (iii) teacher and student competency, which should be at the core of scheme implementation is compromised.

While there is focus on hardware and technology infrastructure, there is not much evidence of a technology-driven pedagogy, nor teacher competency for integrating technology usage in the education process, which makes for underutilisation of infrastructure and low adoption rates lacking in evidenced learning outcomes. And at the intersection of infrastructure and classroom practice, the technology experience for students has been primitively conceptualised, and meaningful engagement with contemporary tools of digital interface and applied skills are glossed over. It would be interesting to learn how the new policy initiatives with ear marked budgets especially the new ICT policy, transition from blackboards to digital boards and the ongoing implementation of Shalakosh, and other programmes envisaged under the New Education Policy or for that matter even Atal Tinkering Labs (having an element of ICT tools), map with an outcome orientation.

3. Ministry of Human Resource and Development, Website: rmsaindia.gov.in/en/guidelines/formats-of-ict-schools.html

6. Approach to teaching: The approach to teaching needs to evolve in a student-centric manner. The focus has to shift from teaching for examination scores to learning and building a knowledge base and a critical skillset[4]. Assessments should be looked at as a diagnostic to feed back into the classroom practices and pedagogy. "Different kinds of experiences lead to different brain structures", according to Dr. Bruce D. Perry of Baylor College of Medicine. In methods, which adopt passive learning like reading text and listening to lectures, learners are able to at best define, describe, list and explain, resulting in 10–20 per cent retention; or in some more passive learning methods like watching still and moving pictures, view and watch demonstrations, learners are able to demonstrate, apply and practice resulting in 30–50 per cent retention. In methods which adopt active learning methods like participating in a hands-on workshop, roleplaying a situation, modelling or simulating a situation, learners are able to analyse, design, create, evaluate with 70 per cent retention, or when they have a direct purposeful experience or go through the real experience, 90 per cent retention can take place[5] E.Dale Audio-visual methods in Teaching, NY Dryden Press, 1969

Case study:

Teach less, learn more approach in Singapore

The Government of Singapore and the Ministry of Education (MoE) in Singapore have asked schools to adopt the TLLM (Teach Less, Learn More) approach where the aim of the teachers is to shift focus away from teaching for a test to a holistic approach where students are prepared for life.

To encourage teachers to break out of the old mode of talk-and-chalk pedagogy, schools have set aside time, known as 'white space' for teachers. During this time, teachers are engaged in professional planning, reflection and collaboration.

Schools have used this space to customise and develop instructional content and materials, and use effective teaching methods and assessments that best suit their students. The MoE plans to invest USD290 million in the next five years in pre-school education which will further improve the base of the student learning

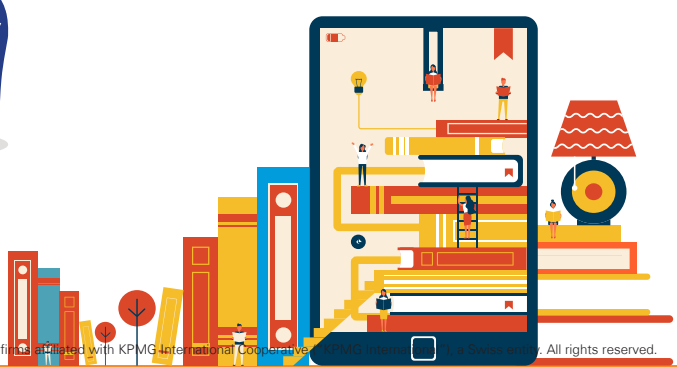
Source: *The education system in Singapore. In Juszczyk, S. (Ed.), Asian Education Systems (pp. 129-148). Toruñ: Adam Marszalek Publishing House*

Case study:

Individual student plans for all students from forms one to seven in Denmark

The Government and the Ministry of Education in Denmark came up with a curriculum-based initiative known as the Individual Student Plan (ISP). This was made a compulsory tool for teachers to continuously evaluate student learning outcomes in all subjects. Teachers were asked to document their assessment and outcome of their evaluation. Teachers were given a mandate to write individual student plans at least once a year for all students from forms one to seven. In Denmark, close to 74 per cent of the teachers use ISPs to document student progress toward long-term learning objectives. ISPs served as a tool for continuous evaluation, and to communicate to parents the level of their child's performance as against common objectives.

Source: *OECD Reviews of Evaluation and Assessment in Education Denmark, Claire*

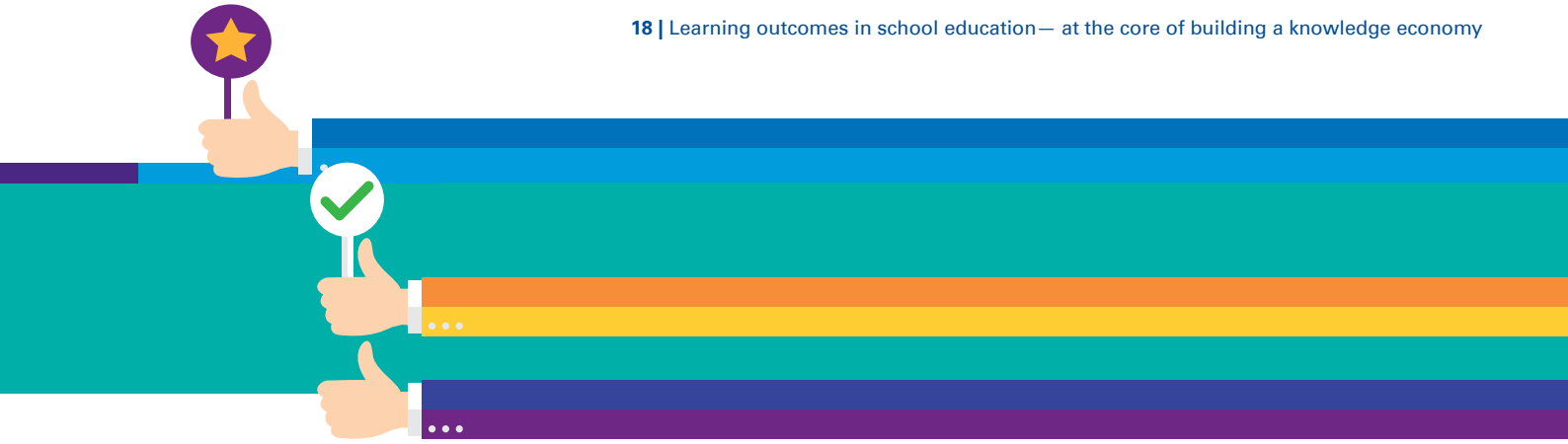


4. The Education System in Singapore , Research Gate, Charlene Tan, January,2016
5. E.Dale Audiovisual methods in Teaching, NY Dryden Press, 1969

4 Our recommendations

Our study recognised some crucial practices for teaching that have positive impact in the classroom. Coupled with a few systemic changes and efforts by schools and communities, these could set the tone for favourable changes in the classroom. For the change to take place a callout for action would involve participation from change agents like governments and nodal agencies, schools, teachers, parents and the education communities:

S.no.	Practice	Policy
1	Stakeholders should encourage **cross-pollination of best practices** in government and private schools across subjects and grades so that changes are better adapted to and universalized	NCERT could build capacity of teachers through a **'teacher training repository'** comprising a series of videos demonstrating best teaching practices in the classroom and handhold states for its implementation and use
2	The teaching-learning process needs to support the learning outcome framework in a holistic manner, so that students are tested on concepts and competencies that they have continuously been engaged in. To strengthen the implementation and use of adaptive learning platforms. Analysis of assessments needs to be mandated, so as to feed back into classroom processes. **Assessments should be looked at as a diagnostic** of what needs to be focused on or what needs to change. Tracking and analyzing data based on the different aspects of a concept taught (application, knowledge, understanding and so on) and taking remedial actions based on it will help teachers as well as students	Under the reframing of the ICT policy, MHRD to promote the **active use of adaptive learning platforms to curate personalized learning paths** as a common practice in government and private schools alike. There has to be **continuous and consistent data collection,** and data-based remedial action. Currently, there are various levels of data collection because of which there are multiple database which may not be consistent, hence decision making may vary too. It is imperative to have standardized data collection for uniform decision-making across states and at the Centre
3	There has to be a **comprehensive curriculum** transition between state board and central boards and from one class to another (especially at the upper secondary level)	NCERT needs to make available **demonstrable techniques as a follow up to its guidelines on learning outcomes with quantifiable metrics** for learning outcomes which can be constantly monitored. To also support schools with regular follow-up to solve for any difficulty, assess need gaps and provide adequate resolution and further capacity building



4	**Language proficiency to be enhanced** to support academic proficiency in other subjects. Moreover, transition to English medium of instruction at upper primary level under state boards to be supported with enhanced English proficiency levels	Curriculum needs to follow a 'whole language approach[1]', with listening speaking reading and writing skills of children being improved. Creating **print-rich environment** for improved language adoption
5	**Accountability** of schools should include use of financial resources but **majorly focus on learning outcomes** and student performance. This should trickle down from the CRCs/BRCs to the school management and ultimately to the teachers in the classroom	Continuous data collection and monitoring for attendance, usage of tools, outcomes and results in a consistent manner. Awareness needs to be **generated on the need for data collection and how it will feed into the reform process.** This will ensure authentic responses from stakeholders
6	**Training needs analysis** needs to be conducted and professional development programmes to be aligned to the context and needs	Continuous professional development: **Regular professional development and follow-up** for evolving needs. There needs to be **continuous evaluation of teachers on the lines of the comprehensive and continuous evaluation** (CCE) **Mandatory up-skilling** every two–three years via short online courses, conceptualizing action-research projects and so on. This will allow teachers to examine problems within their classrooms and give them a chance to collaborate, collect data on strategies implemented and refine their own teaching. This will also raise their own commitment levels
7	Practices such as **co-teaching, teacher mentoring, teacher reflection, research and collaboration** need to be encouraged. Create a teacher educators mentorship network, which will cause a ripple effect in enhancing professional competencies of other teachers. Schools should allow teachers **flexibility in choosing pedagogy** and create an environment where teachers can take some risks	Spaces for collaboration such as **teacher to teacher, peer groups, local circles** need to be created for enhancement of subject matter knowledge, professional and technical competencies, pedagogical methodologies and more
8	Build **sharper lesson plans** and use assessments as a tool for reflection and remediation	Regular **classroom observations to assess effectiveness of a technology or training programme** and tie it back to continuous improvement according to the needs of the environment and context

1. The whole language approach stresses on the importance of children thinking about their thinking, and making sense of skills as opposed to memorising. The whole language approach to reading instruction focuses on children making important connections between reading and real life.

9	**Generate awareness of service expectations, service information and rights** among communities. Also generate awareness among various stakeholders such as SMCs, CRCs/BRCs and management for clear roles and responsibilities and accountability metrics	Every district should have the concept of **'model teachers' and rewards and recognition** where the achievements of teachers are documented and recognized. There should be a competitive entrance test for teachers which is as rigorous as another profession such as for engineering or management). Due to the rigor, this will attract only the best candidates, and make teaching an aspirational career
10	**Concepts** should be built up in **alignment with the environment, geography and context,** by understanding the psychology of a student and creating experiences that they can relate to	Solutions should be contextualized based on the community and geographic needs since each state has a unique growth trajectory and distinctive communities
11	Ensure **tracking of students not only through the curriculum but also through values, mindset, attitude, knowledge and skills and aspirations**	**Counselling for decision-making** relating to career needs to be introduced at the middle school level, as opposed to upper secondary classes
12	Students should be given agency in the classroom – the ability to frame questions and not simply answer questions must be encouraged in an inquiry-oriented approach. This would help build a **'thinking classroom community'.** Communication- and dialogue-based teaching is critical in ensuring build up to the six levels of learning in Bloom's taxonomy	**Revamp the existing Bachelors of Education (B.Ed.) curriculum** and have more evidence backed standardized codes of practice. The curriculum for B.Ed. courses must include practical aspects such as the appropriate use of technology to transact in the classroom, dealing with socio-economic disparity and behavioral differences within classrooms and language for communication and classroom transaction
13	An **environment of support needs to be created for the teacher** where continuous feedback is taken from them and on a regular basis, and a corrective action plan is devised to help the teacher in the classroom.	**Onboard all functionaries** before entering a classroom so as to earn consent and support from all stakeholders.

5 Conclusion

Today's learners are digital natives who have short attention spans, multitask, are connected, game-oriented, like visuals, and need instant gratification. "Our students have changed radically. Today's students are no longer the people our educational system was designed to teach" —Marc Prensky , educationist and writer. In the age of 'screenagers', the learning ecosystem needs to constantly evolve to gratify both active and passive learning needs. Evolved practice must foster twenty-first century skills such as visualisation, visual ability, critical thinking, innovation, design thinking, inquiry, collaboration, debate, system thinking, research, content writing and prudent risk taking. Careful attention needs to be placed on understanding the learning levels of a student and accordingly building up concepts in a directly purposeful, active learning method to enhance learning outcomes.

This study reflects on critical areas of the teaching and learning process that have a positive impact in the classroom. It is important to reinforce a teacher's self-perception as agents of change by empowering them systemically as well as professionally. The design and delivery of curriculum, policies and programmes need to have a bottom-up approach and ensure building up in a student-centric manner, with an emphasis on the 'whole language approach'. Integration of adaptive learning platforms is necessary to curate personalised learning paths. Most importantly, contextualised solutions and community building efforts are critical in ensuring learning gains and improving accountability. Sensitisation of parents and the community, as an extended support to the education system by schools and the government, is necessary to fix accountability.

Policy makers and administrators need to ensure empowering of a cadre of teachers and educators competent in technology and other pedagogies, in collaboration with technology-driven and training organisations. Constant upgrade of their skills with the evolving needs and changes is imperative to ensure relevant teaching in the classroom. Building language skills for communication and academic proficiency in a whole language approach20 is crucial to improve the level of understanding among students. A focus on long-term learning gains and flexibility to teachers will encourage risk taking in the classroom and advance learning gains. These can be assessed through pilot programmes and gradually scaled up by providing handholding support to the states.

Finally, uniform and continuous data collection for informed decision-making and evidence-based practice involving longitudinal action research are important to up the ante. Conscientious efforts to raise awareness and implementation of innovative ideas are required by relevant departments.

Glossary

S.No.	Acronyms	
1	ACER	Australian Council for Education Research
2	ASER	Annual Status of Education Report
3	BRC	Block Resource Centre
4	CCE	Continuous Comprehensive Evaluation
5	CfBT	Confederation for British Teachers
6	CPP	Child Protection Policy
7	CRC	Cluster Resource Centre
8	CTR	Classroom Teacher Ratio
9	ICT	Information and Communication Technologies
10	ISP	Individual Student Plan
11	MOE	Ministry Of Education
12	NAS	National Achievement Survey
13	NCERT	The National Council of Educational Research and Training
14	NCTE	National Council for Teacher Education
15	NDP	No Detention Policy
16	NIMHANS	National Institute of Mental Health and Neurosciences
17	OECD	Organisation for Economic Co-operation and Development
18	PIRLS	Progress in Reading Literacy Study
19	PISA	Programme for International Assessment
20	PTR	Pupil Teacher Ratio
21	SATS	Student Achievement Tracking System
22	SCERT	State Council of Educational Research and Training
23	SMC	School Management Committee
24	TFI	Teach For India
25	TIMSS	Trends in International Maths and Science Study
26	TLLM	Teach Less, Learn More
27	UNESCO	The United Nations Educational, Scientific and Cultural Organisation

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Sarthak Behl

About CII

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process. Founded in 1895, India's premier business association has around 9000 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from around 265 national and regional sectoral industry bodies.

CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes. Partnerships with civil society organizations carry forward corporate initiatives for integrated and inclusive development across diverse domains including affirmative action, healthcare, education, livelihood, diversity management, skill development, empowerment of women, and water, to name a few.

As a developmental institution working towards India's overall growth with a special focus on India@75 in 2022, the CII theme for 2018-19, **India RISE : Responsible. Inclusive. Sustainable. Entrepreneurial** emphasizes Industry's role in partnering Government to accelerate India's growth and development. The focus will be on key enablers such as job creation; skill development; financing growth; promoting next gen manufacturing; sustainability; corporate social responsibility and governance and transparency.

With 65 offices, including 9 Centres of Excellence, in India, and 11 overseas offices in Australia, Bahrain, China, Egypt, France, Germany, Iran, Singapore, South Africa, UK, and USA, as well as institutional partnerships with 355 counterpart organizations in 126 countries, CII serves as a reference point for Indian industry and the international business community.

About KPMG in India

KPMG in India, a professional services firm, is the Indian member firm affiliated with KPMG International and was established in September 1993. Our professionals leverage the global network of firms, providing detailed knowledge of local laws, regulations, markets and competition. KPMG has offices across India in Ahmedabad, Bengaluru, Chandigarh, Chennai, Gurugram, Hyderabad, Jaipur, Kochi, Kolkata, Mumbai, Noida, Pune and Vadodara.

KPMG in India offers services to national and international clients in India across sectors. We strive to provide rapid, performance-based, industry-focussedand technology-enabled services, which reflect a shared knowledge of global and local industries and our experience of the Indian business environment.

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