FICCI ARISE Delegation

May 14-18 2018
United States of America

ACKNOWLEDGEMENTS

At the outset, we would like to express our sincere gratitude to **Mr Anil Swarup, Secretary (School Education and Literacy), Union Ministry of Human Resource Development, GoI** for leading the delegation and extending his support and guidance to make this delegation extremely successful.

We would also like to take this opportunity to thank all the US based educational institutions and companies which kindly agreed to host the delegation and extended their hospitality to the members of the delegation. Last, but not the least, we are deeply thankful to all the delegates who made the delegation come to life and made it a truly informative and educative experience.

BACKGROUND

The education system of a nation plays most vital role in "nation building", not just for current generation but generations to come. Projections show that our country would require a gross incremental workforce of 250 million by 2030, and to cater to this demand, the private and public institutions, private stakeholders and government agencies must come together around a common vision of the way forward. With the positive contribution by all the stakeholders, WE can together make a definite difference and impact.

Broadly speaking, our combined efforts over the past decade have had a positive effect and resulted in upward trends for school education in India. But today, the stakes for school improvement are higher than ever. Across the nation, educators and administrators are under pressure to demonstrate excellence and efficiency in preparing all students for an increasingly complex world, and they must do so in the face of four major challenges:

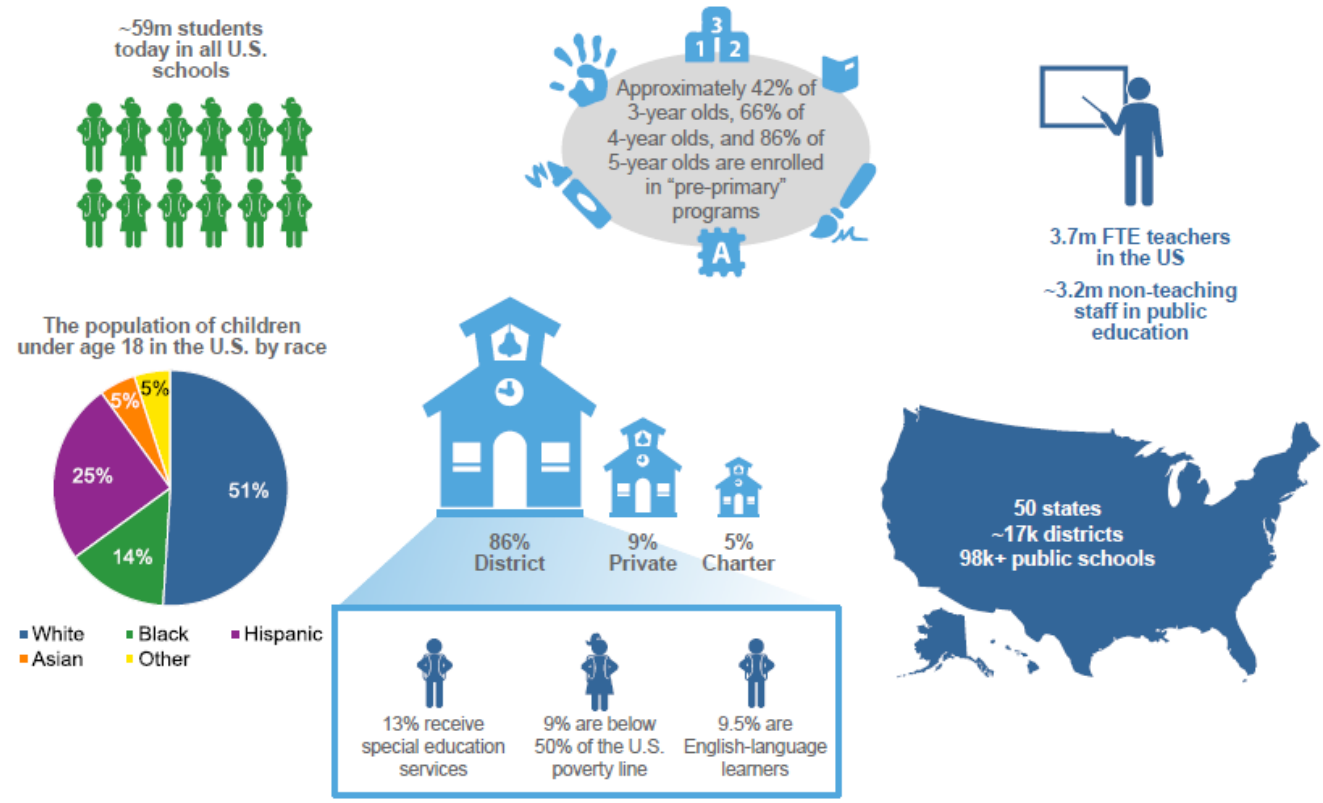
- **Chronic underpreparation:** In today's age of Artificial Intelligence and Augmented Reality, the opportunity of demography dividend is coupled with the emerging challenge of loss of jobs and need for high order skills for new emerging jobs and entrepreneurial opportunities. According to Tony Wagner, from the Harvard Graduate School of Education, students of today need to master key survival skills key survival skills like critical thinking, collaboration, adaptability and communication to thrive in the new world of work. Unfortunately, we in India, still have an education system that mostly propagates rote learning, leaving little scope for creativity, analytical thinking and problem solving.
- **Chronic opportunity gaps:** Many students, particularly economically disadvantaged students, have limited access to new age skills based learning opportunities—such as college preparatory curricula and summer enrichment programs—that lead to strong learning outcomes
- **Revitalizing the workforce:** To deliver 21st century skills we need to develop a large team of highly skilled, motivated and passionate educators. We need to make teaching as one of the most respected, well paid and sought after job for the best and brightest. Such Motivated teachers should be rendered a modern day working environment with independence for experimentation and innovation.
- **Fragmented reforms:** Instead of investing in comprehensive improvement plans, States and schools often feel pressured to adopt quick fixes, resulting in a series of disconnected, surface-level solutions that fail to address underlying challenges. To meet our aspirations for India and in order to remain relevant in the global scenario, we need to create a conducive environment for upgrading existing and setting up several new world class educational institutions that deliver 21st Century skillsets.

FICCI ARISE Delegation to United Sates of America

FICCI ARISE mounted a high-powered delegation of regulators and promoters of leading Indian Private and Public K-12 Schools to USA from **May 14-18, 2018.** The delegation was led by **Mr Anil Swarup, Secretary (School Education & Literacy), Ministry of Human Resource Development, GoI.** The purpose of the visit was to provide an opportunity to understand and experience the American model of educational development in K-12 space and gain broad exposure of American school education system in terms of developing schools, up scaling operations, their successful pedagogical tools and models, technological interventions etc.

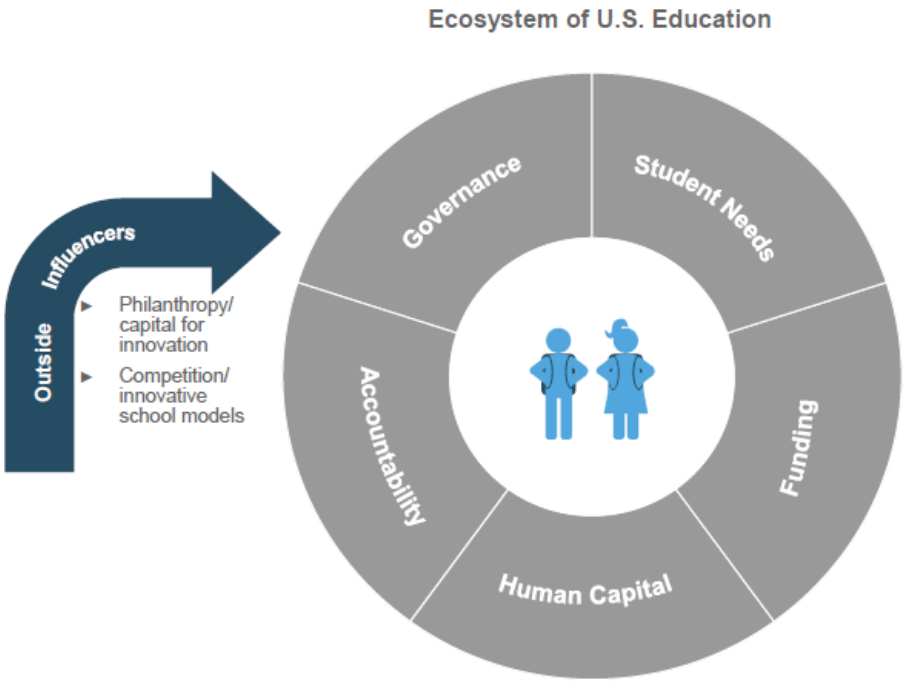
The Indian system of education, given its scale has largely been driven by high stakes examination and rote learning. As we move into the Fourth Industrial Revolution, an era of unprecedented innovation, we need to bring the requisite reforms right down to the classroom. The objective of this trip was to experience some of these innovations first hand and understand how we could adopt some of them in our own context.

Overview of U.S. K-12 Segment



Ecosystem of K12 Education

The ecosystem of education in the U.S. is multifaceted, with several important drivers



Governance:

- Education in the U.S. is fairly decentralized, with most responsibility located at the state and local levels.
- There are three major sectors within K12 education: public district, public charter, and private schools. The vast majority of enrollment is taken up by the district sector, with the charter sector gaining momentum over time

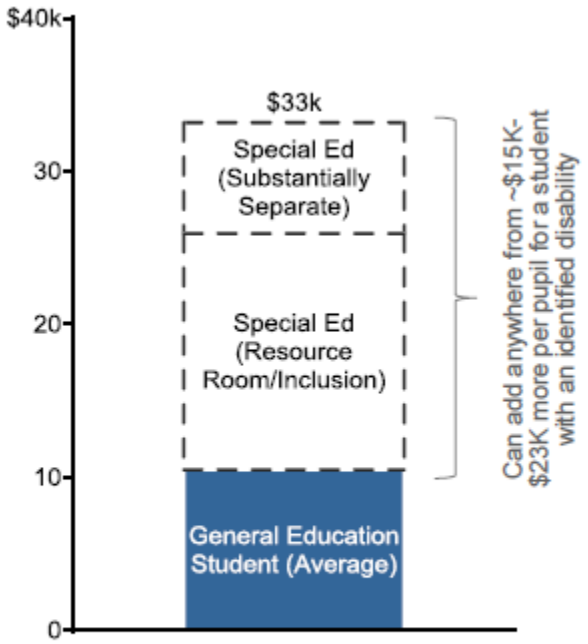
Funding:

- Public funding is similarly decentralized, with states taking a variety of approaches that results in dramatic differences in funding levels across the U.S.
- Total expenditures for public elementary and secondary schools in the U.S. amount to ~$660 billion and is a blend of federal, state and local dollars
- On average, public per pupil funding in the U.S. has risen over the last two decades and is one of the highest in the world. Funding levels have generally risen in the past two decades, now amounting to ~$12k* per pupil in public schools. As per UNESCO reports India spends ~$500-$850 per pupil, between elementary and secondary students.

Funding (With special focus on Special Needs:

- Under federal law, students with disabilities are accorded certain rights, which is backed by federal mandates and funding
- Under federal law, students with disabilities are guaranteed a "free and appropriate public education." This means that schools (or districts) must:
    - **Child Find***:* Conduct outreach and provide diagnostic services in order to identify any child with a suspected disability
    - **Individualized Educational Program (IEP):** Develop an individualized plan for each student with a disability, in collaboration with the student's parents, teachers, and other specialists—that includes a plan for strategies for accommodating the student's needs and outcome oriented goals
    - **Provide Related Services:** Include transportation, developmental, or other supportive services (e.g., therapy) that is also required by a student's IEP to enable the child to benefit from special education
    - **Offer Remedial Processes***:* Mediate parental or family complaints or disputes related to any aspect of a student's disability identification, IEP placement, or implementation

Estimated Additional Costs of Educating Special Education Students, *2015*

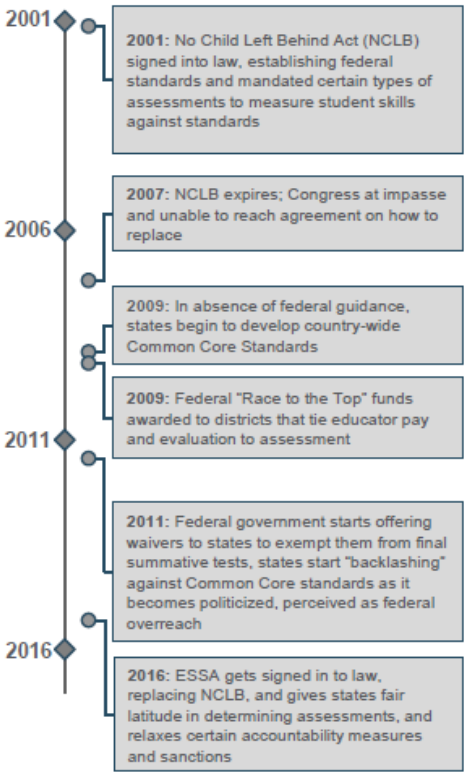


Gen Ed	1
Special Ed (R/I)	2.5x
Sub Sep	3.2x

Human Capital (Capacity Building):

- The U.S. invests significantly in professional development, in alignment with research and beliefs that quality teachers drive strong student outcomes
- In 2015, U.S. made a total Spend of ~$17Billion for ~3.2 Million teachers on Professional Development
- States have certification requirements and teacher licensure exams to screen incoming teacher candidates; states typically require teachers to have a bachelor's degree and a teacher's certificate through a teacher preparation program
- Traditional teacher preparation programs are offered at the university level and combines theoretical pedagogy with practice, though a variety of innovative "residency" programs have cropped up in more recent years
- Many districts include incentives for teachers to pursue master's degrees or other higher certifications
- School systems devote a certain number of days a year for professional development and training
- Recently, the federal government has put new regulations in place meant to strengthen accountability for teacher preparation programs by requiring programs to provide new reporting on various programs, including an assessment of the program's performance

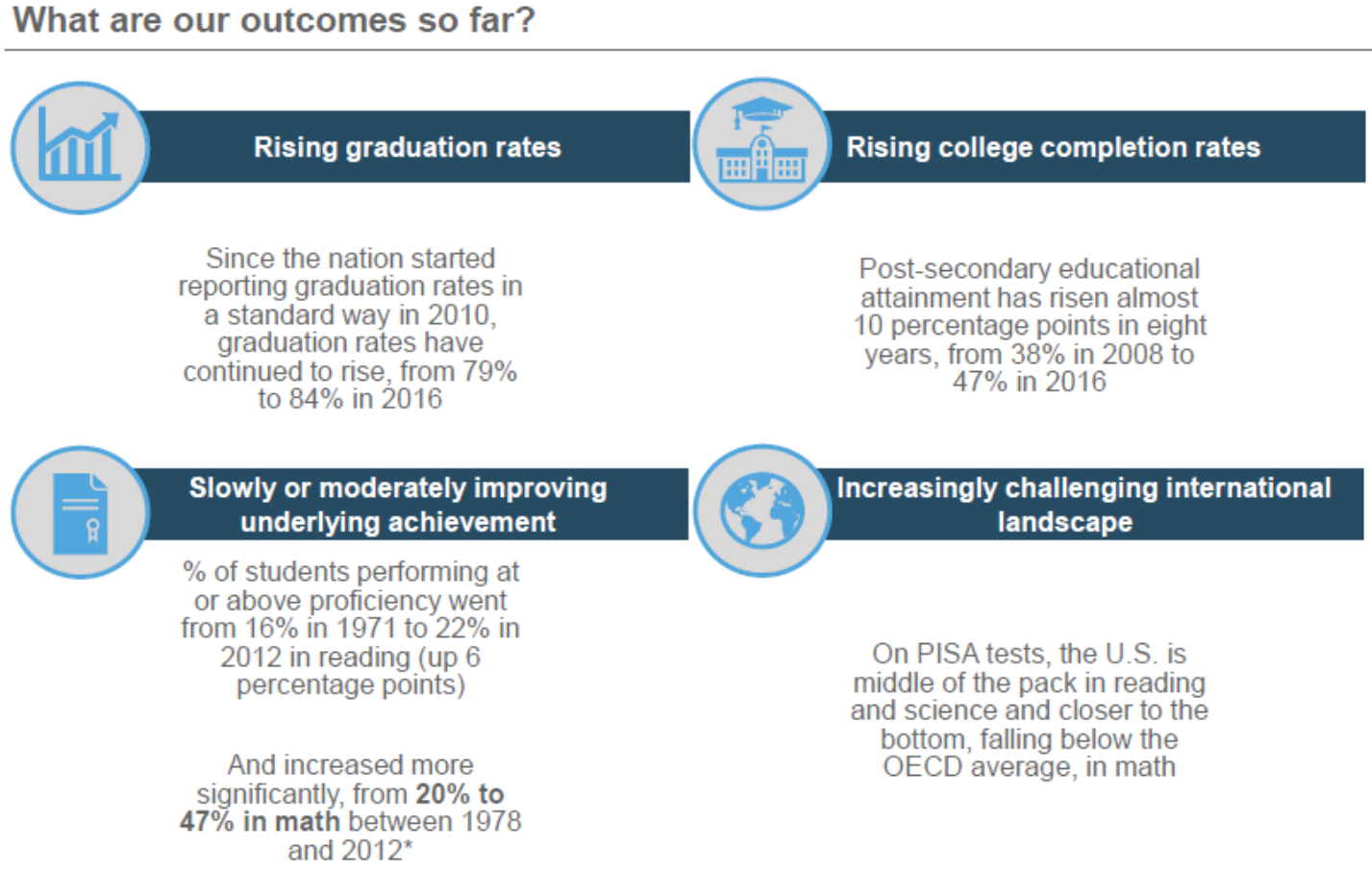
Changing Federal Regulatory Landscape to meet current needs:



Philanthropy:

- Philanthropy provides a source of capital for innovation, experimentation, and scaling that would otherwise be hard to identify in public budgets
- Elementary and Secondary Education: Foundation Funding in the year 2016 has been $2-2.4 Billion

How the Stakeholders' Initiatives have Positively Impacted Various Facets of K-12 Systems:



Introduction of School Level Innovations:

Charter schools, originating in the late 1980s, were conceived of as a way for teachers to try innovative ways of reaching students

- Operated as publicly funded schools by an independent Board that receives an authorizing "charter" that must be periodically renewed
- Receive public funding, but the sponsoring group may also come up with additional private funding
- Enjoy autonomies and flexibilities as it relates to curriculum, pedagogy, management of budget and personnel—and are usually free of certain union restrictions (e.g., how long the school day/year may be, how much they compensate staff, how they hire/fire staff, etc.)

In the realm of school and curricular design, multiple school-based innovations have arisen and are supported by formal and informal networks

What does the growth of new school models suggest?

A shared desire for personalization in education

Beyond differentiation of lessons for students of different skill levels, or efforts to help students move at their own pace … personalized learning promotes 'student agency' —basically, giving students more power through either digital tools or other means, accounting for how they learn best, what motivates them, and their academic goals.

A more significant role for technology and data

In a modern micro-school, there are ways to get good data from each of these venues. And such schools in the future will lean on well-designed software to help adults evaluate where each kid is learning.

The possibility for efficiency and innovation

Unlike traditional, new age model as a system can generate economies of scale. The conventional way of teaching-learning has become redundant and innovation and accepting change have now become the prerequisites for sustenance in the era of Industry 4.0. The new models allow education systems to become more effective through technology, and have the potential to incubate and scale up innovative ideas.

A generation of parents open to new kinds of education

In USA, millennials want their children to be exposed to enabling environment that fosters learning and teaching processes that focus on new age skills are the most likely (75%) among all the generational groups to support school choice.

Institutions/ Organizations	Key Representation	Key Observations	Key Takeaways
Pine Street School, New York City	**Dr Jennifer Jones,** Founder, Green Ivy Schools **Ms Eileen Baker,** Head of School, Pine Street School	**Personalized Learning:** Content, instructional technology, and pace of learning are tailored to the abilities and interests of each learner **Dual language immersion(DLI):** Native Spanish or Mandarin speakers and native English speakers maintain and develop their first language while acquiring native-like communication and literacy skills in a second language **Pre School:** Montessori and Reggio Emillia practices **Design technology:** Use of a wide range of digital tools, media and learning environments for teaching, learning and assessing **Classrooms beyond walls:** Engaged, hands-on experiences via weekly field trips to places of historic and academic value that add context and content to their units of study while bringing theory to life	While Indian Educators recognize the importance of internationalization in K-12 sphere, it is important to rethink how we implement educational changes, and ensure that every learner has access to best resources and supports for the needed educational changes, to produce global citizens The focus must be on a promising curricula that are not only score-intensive, but also allows for freedom to choose a combination of subjects and a focus on the overall developments of students. **Aspects to cover:** (i) Early Childhood Care and Education (ECCE) as a foundation of holistic child development and learning; (ii) Reading and writing in early grades to support the development of essential competencies; (iii) Youth Culture and competencies for Youth in the early 21st century (covering formal, non-formal and informal education); (iv) ICT curricula and inclusive pedagogy contributing to relevant and effective learning outcomes; (v) STEM (Science, Technology, Engineering and Mathematics) curricula to foster sustainable development; (vi) Curriculum for Global Citizenship

			Education (peace, human rights, sustainable development, values, ethics, multiculturalism, etc.); (vii) Assessment to enhance and support learning opportunities and (viii) Inclusive education as an over guiding principle of education systems.

Institutions/ Organizations	Key Representation	Key Observations	Key Takeaways
Avenues; The World School, New York	**Mr Evan Glazer,** Head of School, The Avenues; The World School NYC	**Invested $60 million for the design and construction of this state-of-the-art school facility:** • Students in the Early Learning Center to Upper Divisions enjoy age-appropriate activities on iPads, and Mac Book airs and faculty have access to hands-on classroom technology to support their curriculum. • All faculty and key staff members are trained in how to utilize technology as a transformative tool in a challenged-based learning environment • An infrastructure with a robust wireless network and bandwidth supports all our cloud-hosted systems. • Teachers and students have access to wireless access to interactive SMART projectors, wireless screen sharing, IP cameras and unique academic tools that allow classes to collaborate not only in the classroom but beyond • The entire campus is a showcase for student creative work and supports platforms for collaboration. Students have the ability to showcase their multimedia projects or e-portfolios via interactive displays and even on our multimedia video wall. **Emphasis on core academic skills and the teaching of 'strategic languages'** • Native Spanish or Mandarin speakers and native English	As India emerges as one of the largest economies, every new foreign language provides fresh perspective and opens up new avenues all across the world Different education resources (e-content, audio-visuals, software applications) and web based activities must be prescribed and integrated across subject areas The teachers need to be empowered to use online forums to collaborate with peers and share good teaching practices, engage students to develop higher order thinking skills, use resources to think beyond the classroom and use technology (hardware and software) available to its optimum capacity By making students fully accountable for their work, project-based learning builds persistence, communication skills and self-awareness

		speakers maintain and develop their first language while acquiring native-like communication and literacy skills in a second language **Progressive curriculum featuring "responsive classroom lessons"** • Whenever possible, the intersections between subjects such as art, English and science are emphasized, whether in a hands-on iLab project or a discussion-based World Course class • Across every subject area and at all grade levels projects are thoughtfully designed to send students deep into a particular topic.	

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Brooklyn Technical High School	**Mr. David Newman,** Principal, Acting **Mrs. Gina Paulson,** Assistant Principal, Pupil Personnel Services **Mr. Eric Smith,** Assistant Principal Mathematics	**World Class Facilities:** • Largest physical high school in USA with: • 20+ computer rooms configured to teach digital design and equipped with 3D printers • Manufacturing and robotics lab with CNC tools • DNA/Genetics Lab • Full scale moot court **Rigorous Curriculum:** • Students are required to take set of courses in 9-10 grades that provide a foundation for technical skills in areas such as Engineering, Science Research, Biological Sciences, Applied Mathematics, Law and Society and Arts • Each course provides opportunity to earn college credits **Faculty:** • Those teaching in the Majors have vast experience in industry prior to joining • Experienced as Engineers, Attorneys, Research Scientists, Health Care professionals **Alumni and the Foundation:** • Strategic partnership between 50,000+ devoted alumni and foundation to raise money to	The relevant Ministries could explore the possibility of introducing apprenticeship at High School Level and creating guidelines to link school, vocational and university education through credit transfer mechanism and at the same time define pathways between schools, Polytechnics, ITI and Skills Centers It may also interest the relevant stakeholders to enhance capacity utilization by introducing dual education programs and flipped classroom model which will reduce the classroom contact time & per learner infrastructure need while improving the learning outcomes

		support transformational changes such as : Enhancement to curriculum to enrichment programs for students to professional development for faculty	
Big Picture Learning- MET High School, Providence, Rhode Island		Empowers its students to take charge of their learning, to become responsible citizens and life-long learners. Once at a site, students develop a rigorous project that they can work on with their mentor and back at school with their advisor. These projects become the foundation for the student's learning plan and provide opportunities for the student to explore and master content, skills, and reasoning. Hallmarks of a Met education include internships, individual learning plans, advisory, and a breakthrough college transition program.	Internship heavy curriculum at school level itself will provide students with the opportunity to explore what they are passionate about early, allowing time to develop interests prior to college A model such as this may also pave way for adoption of school/college by industry in the catchment area and creating industry mentor network. -Integration of "entrepreneurship education" in schools

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Philips Exeter Academy, New Hampshire		State of the art Science- 72,000 sq ft science building includes 20 classrooms with labs; four dedicated wings (Physics, Chemistry, Biology and Multi-Science) The heart of Exeter is its signature Harkness method of instruction- • Class size is limited to 12 • Students lead the discussion • An oval-shaped table, named in the philanthropist's honor, stands in the center of the room - making students and instructor equal. They sit at the same height, can see one another from any seat at the table, and have "no corners to hide behind'' If standardized testing scores are any indication of the Harkness method's success, it's worth nothing that Exeter students averaged an SAT score of 2107 out of 2400, a full 610 points higher than the national average.	Pupil-Teacher Ratio (PTR) is a strong indicator of the amount of individual attention any single child is likely to receive. An improved PTR in India calls for deeper engagement exercises with students The Harkness learning method as an example gives an opportunity through which learners become capable of independent thought which, in turn, forms the basis for autonomous action and has the potential to have a profound impact on modern educational theory and practice

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Francis W Parker Charter Essential School, Boston	**Ms Colleen L. Meaney, Director**	Parker organizes instruction into integrated domains that include all the conventional subject areas: • A/H – Arts and Humanities; • MST – Mathematics, Science and Technology • Spanish • Wellness – Health and Physical Education They are the basis for the individual rubrics designed to assess student work. Student work and progress is exhibited via Portfolios. Students can gateway from one division to the next based on Promotion by Portfolio and the successful completion of a Gateway Portfolio. The Parker School does not rank its students, nor does it award letter grades, honors or prizes. However, Parker students do take the required Massachusetts state assessments (MCAS) and the usual array of college entrance examinations such as the SAT and ACT	Charter Schools such as Parker, operates with more in-school instructional time, and an unrelenting focus on data-based student achievement. Such scientific methods could enhance learning in Indian Schools as well. The feature of creating Gateway Portfolio Exhibition at marks a student's successful progress through the multi-year Division curricular cycle, such an exercise, if adopted, makes students active participants in their own educational progress

Boston Arts Academy, Boston		High-level training for students in dance, music, theater, or visual arts in the context of a college preparatory curriculum Individualized attention for each student by experienced, award winning staff PSAT and SAT test prep classes Success after graduation: an average of 94% of graduates are accepted to college each year A full-inclusion high school, offering comprehensive services to differently abled students Dual enrollment available in partner colleges STEAM(science/technology/engineering/arts/math) lab to integrate subjects in an inquiry-based, hands-on curriculum in a way that more closely aligns with what students will experience in college	By studying different artistic traditions, students become aware of the cultural contexts that inform perception and imagination and begin to see their own work in context. Additionally, sophisticated artistic literacy is an essential skill, enabling students to apply concepts fundamental to the disciplines of science, engineering and math in a variety of unique situations Incorporating technology in a model such as this has the potential to provide a relevant learning experience, allowing students to actualize key concepts and express original ideas.

Institutions/ Organizations	Key Representation	Key Observations	Key Takeaways
Henderson Inclusion School, Boston		Inclusive school that mainstreams disability Students involved in general education; students with mild, moderate, and significant disabilities; and students considered talented and gifted learn together and from each other. The school uses and adapt Massachusetts Mathematical and English Language Arts Curriculum Frameworks to help all students learn and succeed. Effective system of feedback & Data: • Detailed action plans to support teachers in identifying areas for their own growth. • General education and special education teachers jointly plan and execute lessons, transparently share their practice and feedback to improve learning for all students regardless of abilities • Use of data to highlight trends in progress and areas for student growth. • Educators then check in on students' growth against those standards at data cycles throughout the year to determine progress.	As per the Rights of Persons With Disabilities Act, 2016, every child with special need gets free education from the age of 6 to 18. In this context, it is crucial to ensure that rigorous professional development programmes for in-service mainstream teachers as well as special educators are implemented so that they can work collaboratively towards inclusive classes It is also important to incentivize schools which are successfully following inclusion practices State leaders must also explore the opportunity to focus on investing resources to enhance access to shared data sources and link systems between agencies and across communities. This will allow a variety of stakeholders in local communities to make data-informed decisions in the interest of student learning outcomes.

Institutions/ Organizations	Key Representation	Key Discussions	Key Takeaways
Boston Teacher Residency	**Mr Jesse Solomon,** Executive Director	One of the leading alternative teacher preparation and certification programs in USA It combines coursework with mentoring at low tuition to get people to teach in shorter span of time The Boston program is modeled after a medical residency. Throughout the summer and on Fridays during the school year, the students take typical education classes. The coursework and seminars are like those in any master's in education program, except that they're geared specifically toward working in the Boston school district. Residents spend a year in a Boston school, four days a week, with a mentor teacher. As the year goes on, they take over the actual teaching. They also gather as a team in each school so they can share what they're learning and turn to on one another if problems arise. By the second summer they're placed in a school where they take over their own classroom. Addresses 3 issues:	Considering the changing landscape of the industry, formation of the Sector Skill Council to spearhead all the skills development initiatives within the education sector is of significant importance. This would enable building well-defined job roles and mapped career progression based on a set of standardized benchmarks Given the growing demand of quality teachers in the sector, it is time to build alternatives to the existing rigid eligibility criteria for recruiting teaching and non- teaching staff Such initiatives would also help facilitate and motivate mid-career switch for professionals to take up teaching

		• Recruitment in High Needs Areas • Retention • Prepare into coherent instructional agenda BTR is a licensing agent; Master's degree from UMASS Caters to a segment of career switchers to meet the demand for quality teachers	