VOLUME 8

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

Human Resource and Skill Requirements in the Education and Skill Development Sector

(2013-17, 2017-22)

cutting through complexity

This report is prepared by KPMG Advisory Services Pvt Ltd (KASPL).

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Acknowledgement

We are grateful to the Government of India and its various departments, State Governments, Industry Associations, Sector Skill Councils, Skill Training Institutions, Academia and NGOs, for their contribution towards the successful completion of the Sector Skill Gap study (2013-2017, 2017-2022).

We would like to thank all NSDC's industry and training partners for their active participation. The success of the study has been possible through their collaborative efforts.

In addition, we convey our gratitude to all those who have, in some way or other, contributed towards the successful completion of this study.

Executive Summary

Industry Overview

Indian education and skill development industry grew at an average rate of 13% in the last four years from over Rs. 1.21 trillion in 2008 to over Rs. 2.35 trillion in 2012

Key Growth Drivers

School education sub-segment -

- Increasing government impetus in successive five year plans
- Rising disposable income of Indian population
- Increase in population in the target age groups
- Increasing private sector participation

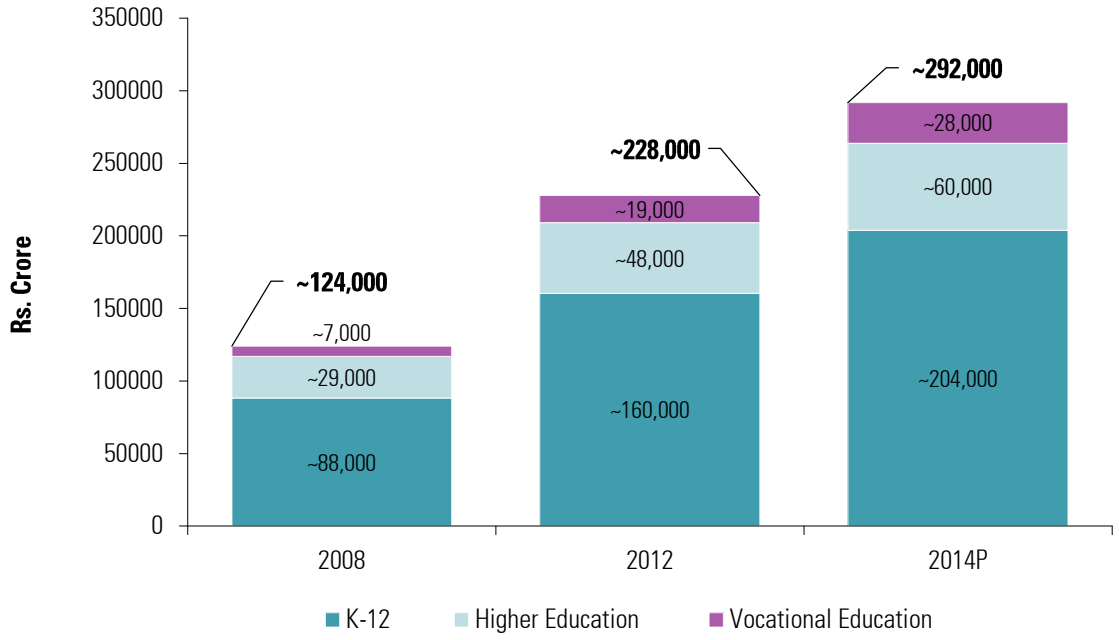
High education sub-segment –

- Increasing private sector participation
- Increasing Population in the age group of 15-24 years
- Policy drive to improve gross enrolment ratio in higher education institutes

Vocational education sub-segment –

- Increasing absorption of dropouts from mainstream education who are seeking a career or skill upgrade
- Increasing awareness amongst Indian employers and population
- Increasing private sector participation

Market size of Education and Skill Development sub-segments (in Rs. crore)

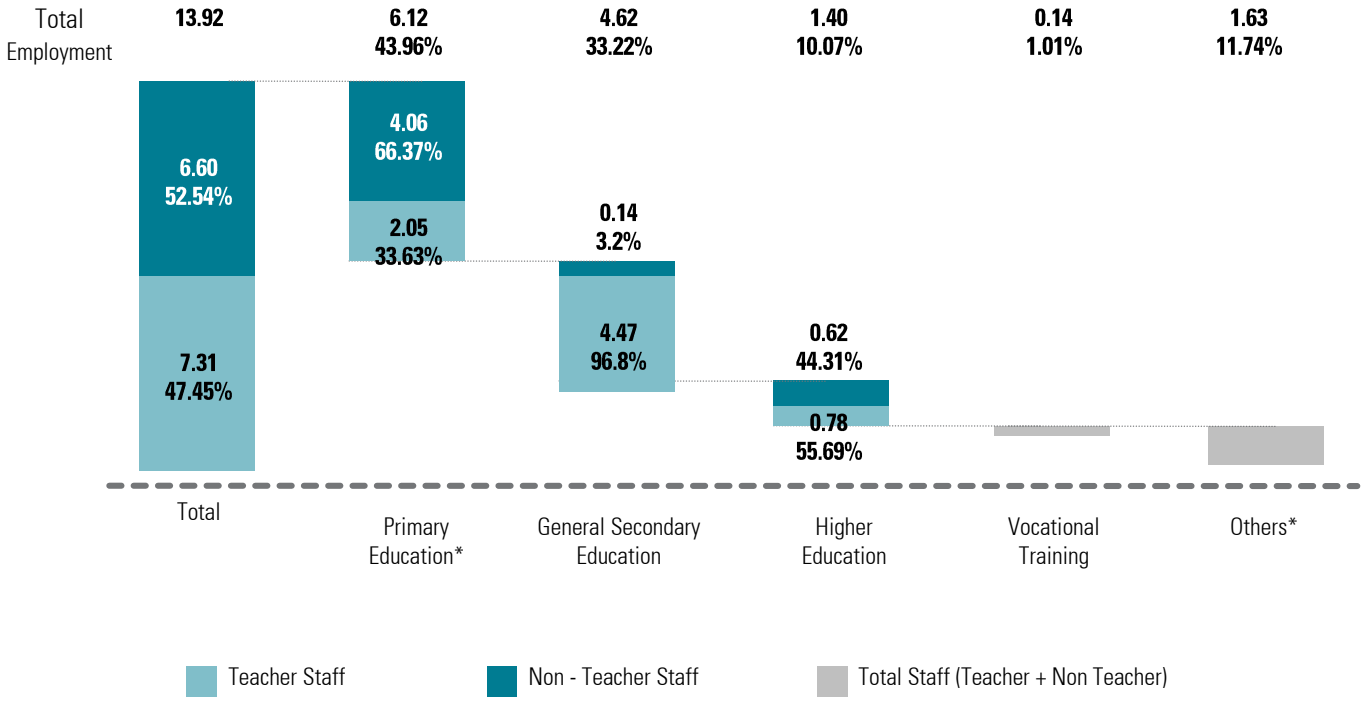


CAGR (2008-14)	
K-12	13%
Higher Education	11%
Vocational Education	22%
Overall	13%

Sources: KPMG in India analysis

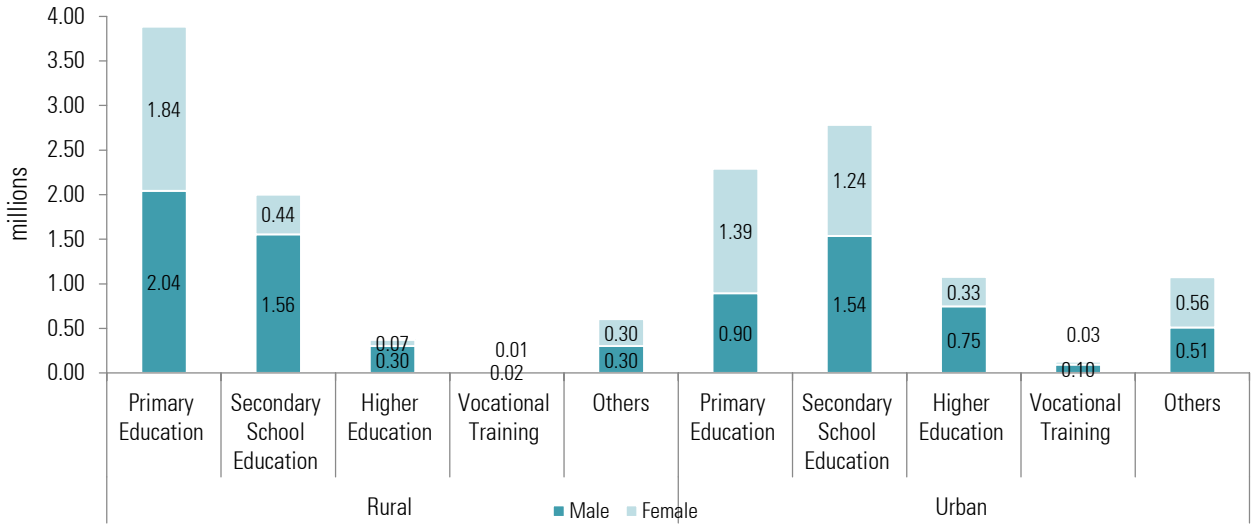
Employment by sub-sectors and gender

Distribution of employment across sub sectors (as of 2011-12) in millions



Source: NSSO 66th Round, 2011 – 12 and KPMG in India analysis

Gender distribution of workforce (as of 2011-12)



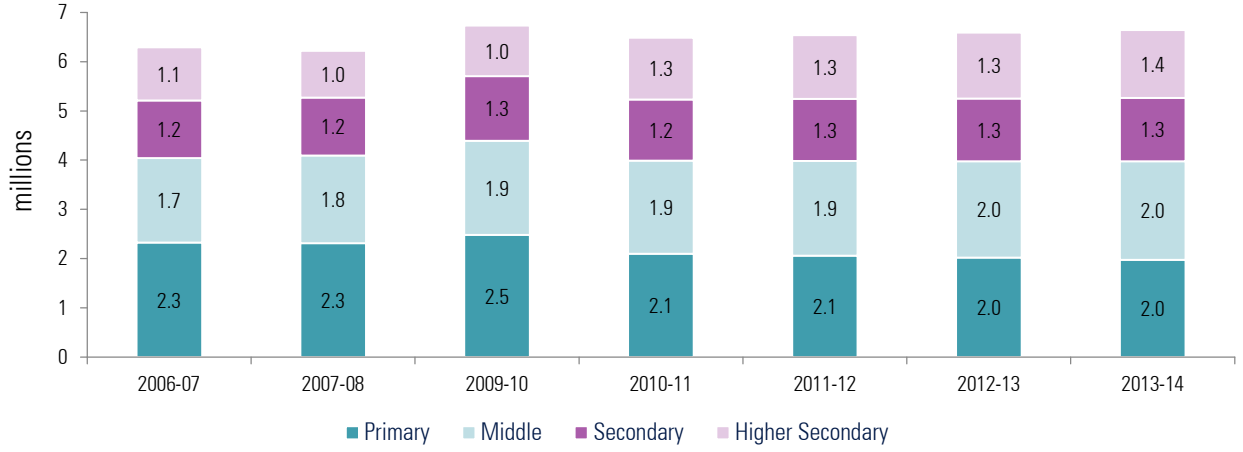
Source: NSSO 66th Round, 2011 – 12 and KPMG in India analysis

Employment by sub-sectors and gender

School education

Of the total1.07 crore persons employed in the school education sector, about 67 lakh are employed as teachers.

Trends in teacher employment in school education



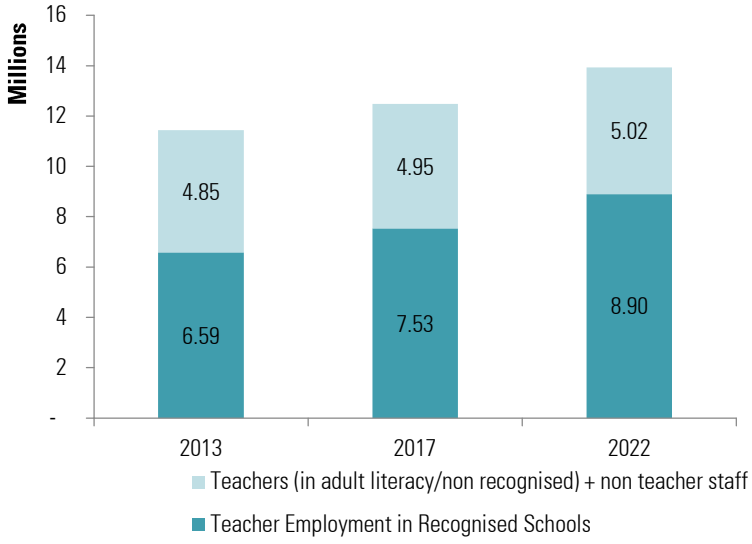
Source: Historical Statistics in School Education, MHRD & KPMG in India analysis

Number of teachers (as of 2011-12) as per school category

Source: DISE Data, Analytical Tables 2011-12

Employment Growth Projections

Distribution of Workforce in School Education



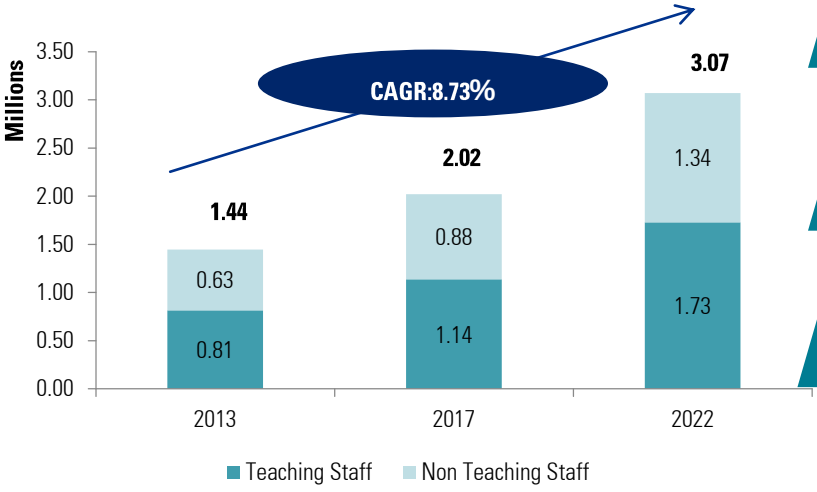
1:40

Is the Student – Teacher Ratio Norm in Primary Education (I-V) as per RTE

1:35

Is the Student – Teacher Ratio Norm in Middle School Education (VI-VIII) as per RTE

Distribution of Workforce in Higher Education



56.3%

Is the teaching staff of the total workforce in Higher Education

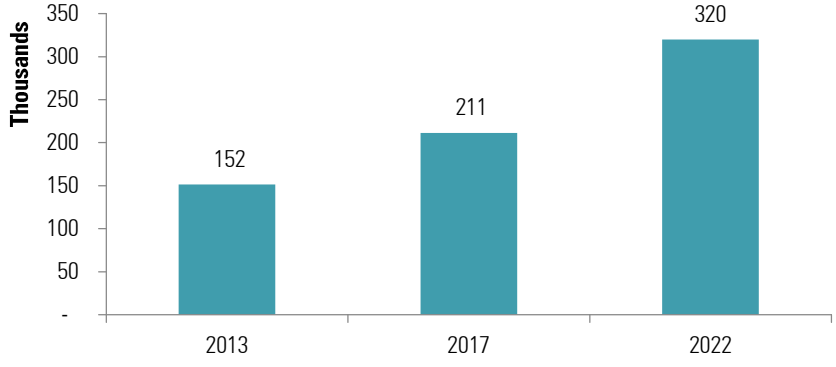
1:25

Is the current Student – Teacher Ratio in Overall Higher Education as of 2011-12

1:10

Is the Norm for Student Teacher Ratio by AICTE

Workforce Requirement in Vocational Training (Teacher and Non Teacher)



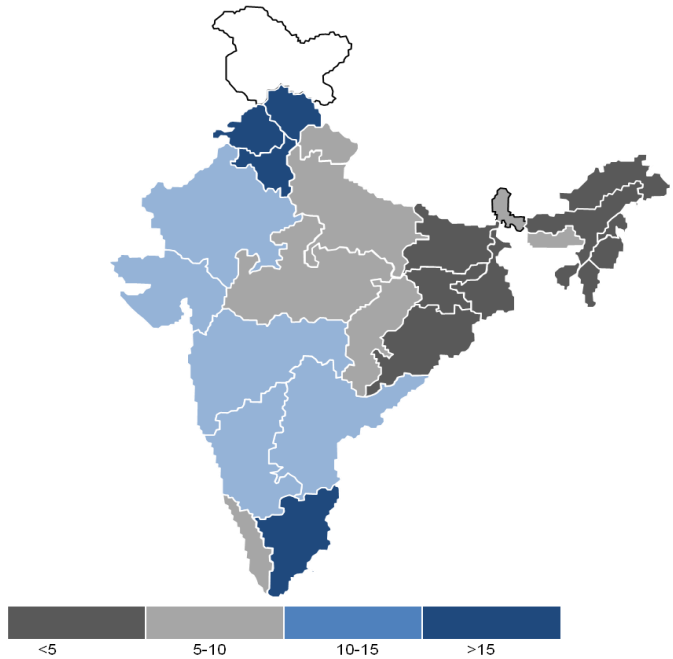
Training Infrastructure

- Addressing the imbalances and the increased demand for quality teachers in the country, the government established the National Council of Teacher Education (NCTE) with the twin strategy to (a) prepare teachers for the school system (pre-service training) and (b) improve the capacity of existing school teachers (in-service training).

- There is a large network of government – owned teacher training institutes (TTIs) which provide in – service training. The NCERT along with its six regional instates of education prepares a host of modules for various teacher training courses and also undertakes specific programs for teacher educators. Similarly, there are State Councils of Educational Research and Training (SCERT) to serve the purpose. Following table gives a list of institutes that offer various programs in teachers' education.

Institute	Programme
Cluster Resource Center	In – service education
Block Resource Center	In – service education
District Institute of Education	D.Ed. (Elementary School)
State Council of Education Research and Training	D.Ed + Pre- School Teacher Education
Private Institutes affiliated to SCERT	D.Ed + Pre- School Teacher Education
Institutes of Advanced Studies in Education	B.Ed, M.Ed, M.Phil and PhD in Education

Seat Intake Capacity (per 10,000 persons) in Teacher Training Institutes



Number of Seats per 10,000 persons for Teacher Education (D.Ed + B.Ed + M.Ed)

- The intake capacity of these institutes offering teacher education and training is 12.95 lakh provided by more than 16000 institutes (including both government and private offering range of programs from certificate courses to PhD in Education).

- The exhibit below gives an overview of the seat capacity across various states that offer teacher's education programs (including Diploma, Bachelors and Masters in Education). Tamil Nadu and Haryana have the largest capacity offering 28.93 and 30.18 seats for teacher education per 10,000 persons. States like Orissa, West Bengal, Meghalaya and Other North East States have a capacity of less than 5 seats in teacher education per 10,000 persons.

Select recommendations & implications

Recommendation	Implications
Provide long term benefits and recognition to teachers and improve overall work benefits	▪ Launch a national level marketing campaign to restore the pride of the teaching profession by highlighting the job satisfaction, the work benefits including paid vacation, work timings and career path ▪ Revamp the teacher training (pre service and in service) to include latest pedagogical methodologies and quality assurance techniques ▪ Highly structured incentive schemes which take technical competency, teaching assessment, student perspectives, soft skill competencies into consideration and based on the rating monetary perks are provided ▪ Division of institutions in tiers based on prestige and opportunity for teachers and developing bands within the tiers to provide career progression incentives ▪ Based on assessments teachers are provided with a three-year improvement plan where they can work on their areas of development and leverage their strengths
Curriculum development, training and assessment of teachers in needed to ensure quality	▪ Stringent screening of candidates who take the TET will ensure that only the best candidates get through ▪ A more comprehensive and coherent curriculum that encompass the latest development and interdisciplinarity is needed ▪ M.Ed programe should be a two-year programme with sufficient provisions to branch out into curriculum studies, pedagogic studies, policy, finance and foundational studies ▪ Quality of teacher assessment needs to improve. A pre-service teacher education programme to test the aptitude of the candidates on qualitative parameters as well such as attitude towards children, values, disposition, habits and communication skills is important ▪ Need to have a national level academic body for periodic assessment of teacher education programmes both pre and in service, continuos update of curriculum with changing needs and development of faculty for teacher educators
Consider policy level changes in providing for faculty positions drawn from non PhD backgrounds	▪ UGC could look into allowing a small percentage of non PhD faculty who could rise to Professor and administrative positions in universities and colleges. Such faculty should be selected from a pool of exceptional industry experienced professionals with 15 to 20 years of work experience and whose teaching and research capabilities can be tested and certified ▪ A national level certification program could be developed for assessing pre-service and re-training of faculty from both PhD and non PhD backgrounds
Improve the overall perception of vocational education and offer incentives for trainers	▪ Developing training institutes with industry infrastructure that will ease the investment needed from educational institutions particularly for technical education and VE ▪ Structured programs for teacher training particularly in the VE sector that requires industry exposure ▪ Norms that take softer skills into consideration for certifying teachers. Soft skill training is essential for teachers and would vastly improve the productivity of the sector ▪ Technical training requires practical industry exposure . REEMAP has tied up with industrial organizations to provide teacher training through practical exposure. Increasingly, governments must realize that going for the typical L1 tender in this space will not get quality. In this context, schemes which allow cost structure based contracts are a good strategy to delivery quality training

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Abbreviations

AICTE	All India Council for Technical Education
ASER	Annual Status of Education Report
B.Ed	Bachelor of Education
CCE	Continuous and comprehensive evaluation
CIE	Central Institute of Education
CSR	Corporate social responsibility
CTET	Central Teacher Eligibility Test.
D.Ed	Diploma in Education
DGET	Directorate General of Employment & Training
DISE	District Information System for Education
DPEP	District Primary Education Programme
FTT	Full time teachers
GER	Gross Enrollment Ratio
IB	International Baccalaureate
ICSE	Indian Certificate of Secondary Education
ICT	Information and communications technology
INR	Indian Rupee
ITC	Industrial Training Centre
ITI	Industrial training institute
KV	Kendriya Vidyalaya
MBA	Masters in Business Administration
MBBS	Bachelor of Medicine
MCI	Medical Council of India
M.Ed	Masters in Education
MHRD	Ministry of Human Resource Development
MOOC	Massive Open Online Course

Abbreviations

MOSPI	Ministry of Statistics and Programme Implementation
M.Phil	Master of Philosophy
NAAC	National Assessment and Accreditation Council
NCTE	National Council for Teacher Education
NSDA	National Skill Development Agency
NSDC	National Skill Development Corporation
NSQF	National Skills Qualification Framework
PGT	Post Graduate Teacher
PhD	Doctor of Philosophy
PISA	Programme for International Student Assessment
RMSA	Rashtriya Madhyamik Siksha Abhijan
RTE	Right To Education
RUSA	Rashtriya Ucchatar Shiksha Abhiyan
SDC	Skill Development Centers
SSA	Sarva Shiksha Abhiyan
SSC	Sector Skill Council
STAR	Standard Training Assessment and Reward
TET	Teacher Eligibility Test
TGT	Trained Graduate Teacher
UGC	University Grants Commission
VE	Vocational Education

Context and approach

Brief background	NSDC had conducted sector-wise skill gap studies for 19 high priority sectors in 2008–09 . ▪ KPMG has been engaged as a consultant to help evaluate the skill gap across 25 sectors and develop actionable recommendations for its stakeholders. ▪ Mandate includes sector and sub-sector level analysis, demand-supply projection, estimation of incremental man-power requirement between 2013-2017 and 2017-2022, identification of key-employment clusters, and SWOT analysis of each sector ▪ Study also aims to take qualitative insights from stakeholders on enablers and challenges for each sector, way forward in terms of specific policy level actionable recommendations,
Inclusions over the previous study	▪ Study led by industry – Sector Skill Councils and a panel of professionals from different sub-sectors were consulted for their inputs on industry trends, key takeaways in terms of skill requirement, qualitative insights to understand specific interventions required for each sector and to validate the quantitative results and recommendations ▪ 6 sectors were added to the list of NSDC priority sectors for studying the skill gaps Updated study also includes ▪ Identification of top 20 job-roles in each sector, case studies around good training practices, sub-sector level indicators and growth factors ▪ Study also includes understanding of existing training infrastructure, work-force characteristics and employment clusters, ▪ Macro economic factors, central and state governments policies and their envisaged impact ▪ Synchronisation of the sector wise demand from the district level skill gap studies ▪ Recommendations for key stakeholders - Industry, NSDC, Training organizations and Government ▪ Environment scans every year till 2015-16 including SWOT analysis for the sector

Industry classification

Sector and sub-sectors as per NIC classification

NIC Code 85: EDUCATION	
NIC Code 851: Primary Education	
1. Primary Education	Pre-primary education (education preceding the first level)
	Primary education (education at the first level)
	Provision of literacy programmes for adults at primary level
	Special education for handicapped students at primary level
	Other primary education activities n.e.c
NIC Code 852: Secondary Education	
1. General Secondary Education	This class also includes senior/higher secondary education
	General school education in the first stage of the secondary level (up to Xth standard) without any special subject pre-requisite
	General school education in the second stage of the secondary level (Senior/Higher secondary) giving, in principle, access to higher education level
	Special education for handicapped students at first stage or second stage of secondary level
2. Technical and Vocational Secondary Education	This class includes programmes that emphasize subject-matter specialization and instruction in both theoretical background and practical skills generally associated with present or prospective employment
	Technical and vocational education below the level of higher education except for handicapped
	Technical and vocational education for handicapped students below
	Professional motor driving school
NIC Code 853: Higher Education	
1. Higher Education	Higher education in science, commerce, humanity and fine arts leading to a university degree or equivalent
	Higher education in engineering / other technical courses leading to a university degree or equivalent
	Higher education in management courses leading to a degree or equivalent
	Higher education in law leading to a degree or equivalent
	Higher education in other professional/ vocational courses leading to a degree or equivalent

Sources: National Industrial Classification 2008, Central Statistical Organisation, Ministry of Statistics and Programme Implementation, Government of India

Sector and sub-sectors as per NIC classification

NIC Code 854: Other Education	
Sport	This class includes the provision of instruction in athletic activities such as baseball, basketball, cricket, football, gymnastics, swimming etc
Cultural Education	This includes instruction in the arts, drama and music. Units giving this type of instructions might be named "schools", "studios", "classes" etc. They provide formally organized diploma, baccalaureate or graduate degree instruction, mainly for hobby, recreational or self development purposes, but such instruction does not lead to a professional
Other Education	This class includes the offering or providing of instruction and specialized training, generally for adults and not comparable to the general education in groups 851-853
	This class excludes:
	adult literacy programmes see 8510
	general secondary education, see 8521
	driving schools for occupational drivers, see 8522
	higher education, see 8530
NIC Code 855: Education Support Services	
Education Support Services	This class includes the provision of non-instructional services that support educational processes or systems such as educational consulting, guidance counseling services, testing evaluation services etc

Sources: National Industrial Classification 2008, Central Statistical Organisation, Ministry of Statistics and Programme Implementation, Government of India

Industry overview

Introduction

1

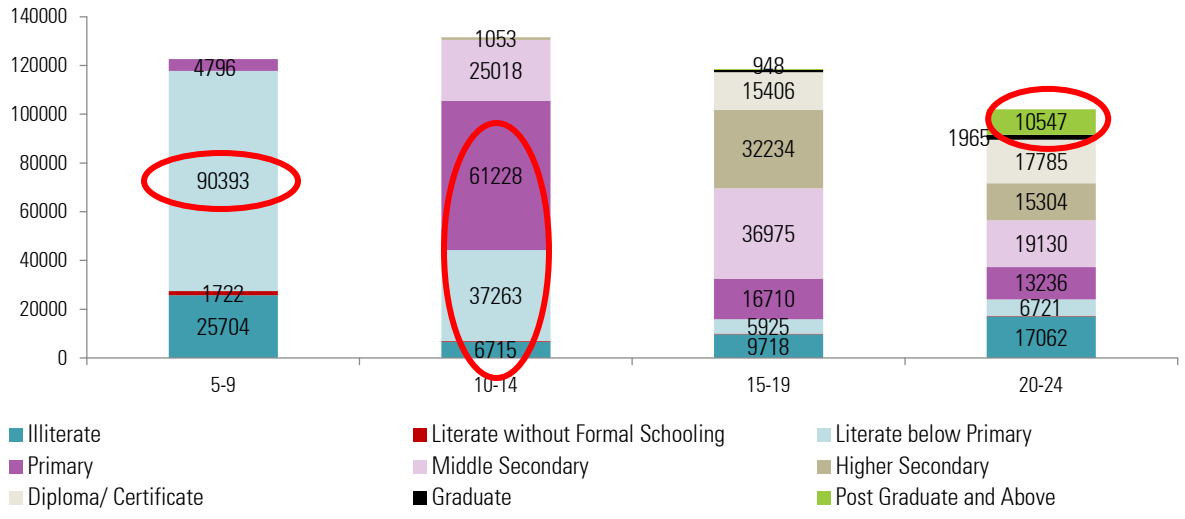
- India has the largest population in the world in the age group of 0-24 years (~600 million)
- About 60% of this population is in the age group of 0-14 years (K12 segment)
- Enhancing access and reach of education is critical to meet the rising demand

2

- With an expected population of 1.4 billion in 2022; India will have ~63% individuals in the working age group (15-59 years)
- Enhancing the pool of skilled labor is critical for the economic growth of the nation

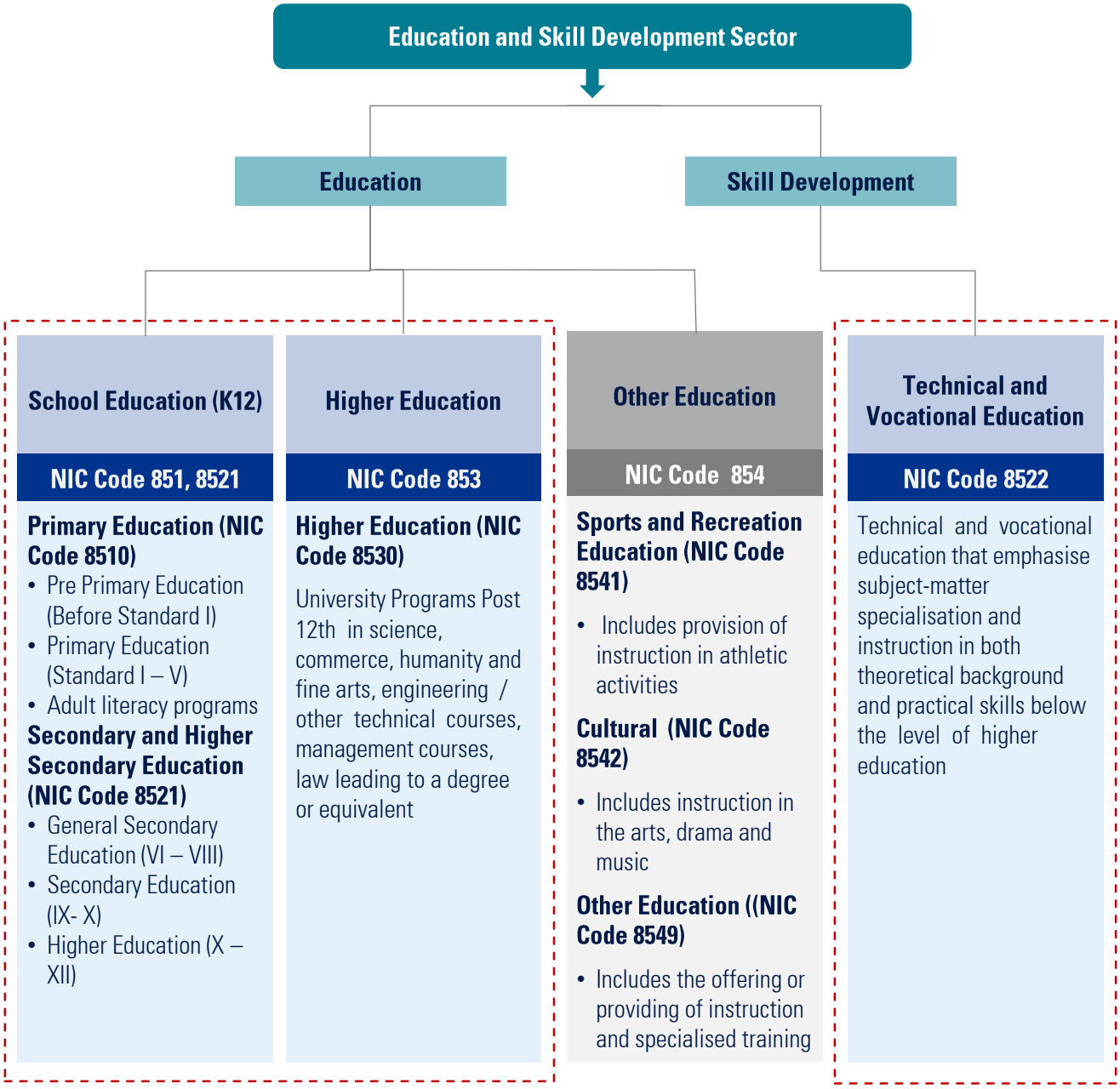
Educational attainment profile of Indian population – articulating the deficit	
Age Group (years)	Comment
5 - 9	Over 96% of the population were either illiterate or had not completed primary school
10 - 14	About 75% of the population had not progressed beyond primary schooling
15 - 19	Over 85% of the population had not progressed beyond higher secondary schooling
20 - 24	Only 2% of the population are graduates or above

Education attainment by population under each age group (as of 2009-10)



Source: Status of Education and Vocational Training in India as of 2009-10 (66th Round), MOSPI

Sub-segments



* The highlighted subsectors cover approximately 88.26% of the total teachers employed in the education and skill development industry of India (as per NSSO 2011-12) . Hence these have been covered in the report.

Sources: National Industrial Classification 2008, Central Statistical Organisation, Ministry of Statistics and Programme Implementation, Government of India and KPMG in analysis

Value chain

1 Curriculum	Planning for instructional content and methods for evaluation of students. Curriculum is usually developed by the regulatory bodies, be it the centre or state boards for school education or the universities for higher education. In India, curriculum for unregulated institutes such as the private vocational training is designed by the institutes themselves.
2 Content	Content development is closely linked to curriculum. It includes, development of syllabus, subject, course material, exam patterns, etc. The regulatory authorities in school education usually develop the content which could be used a guidance for further customization by the schools.
3 Delivery	Teaching the course to the student using appropriate delivery modes such as use of technology , on-field study, interactive discussions, etc. For higher education, offering exchange programs and research assignments are among other ways.
4 Assessment	Assessment includes conducting examinations and evaluating the performance of the students through various ways. This could include, school or national level examinations on an annual basis, or quarterly practical and theory assessment of higher education students.
5 Certification	Upon successful completion of the program, students are certified by affiliated boards or universities

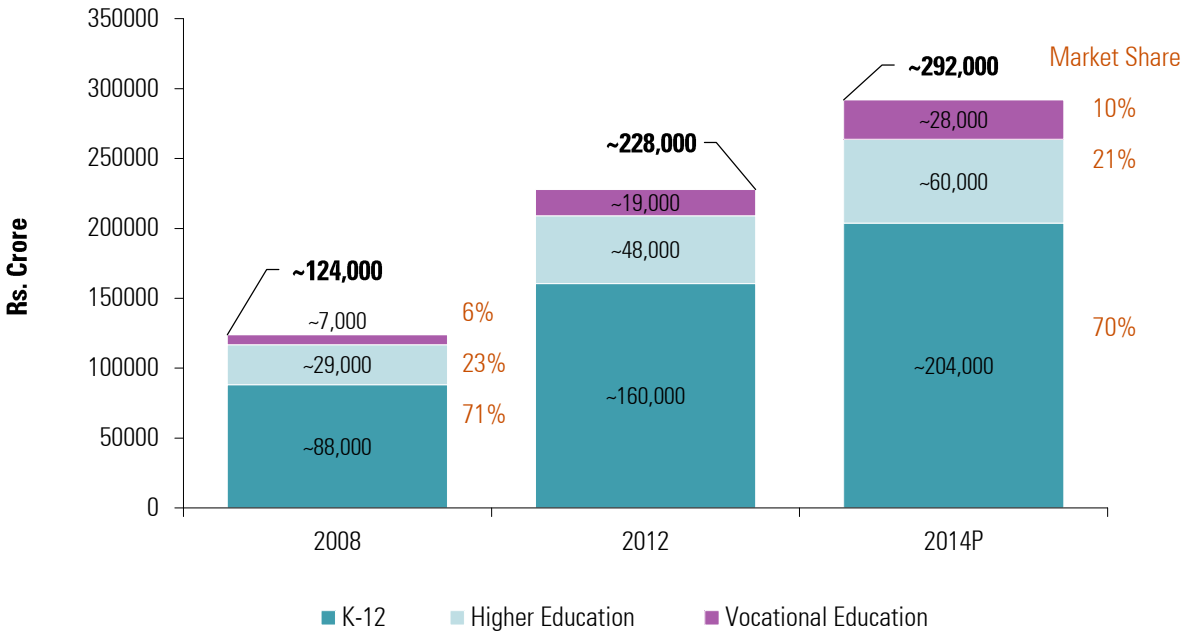
Although there is a universal value chain for the entire sector, the institutional framework across the value chain may differ amongst the sub sectors.

- School and higher education fall under the purview of the Ministry of Human Resource Development
- Schooling is regulated by the State Boards, ICSE, CBSE and other International Boards as relevant
- Higher education institutes are governed by a single body called University Grants Commission (UGC)
- Non-regulated channels are the pre-schools, day cares which form a relatively small part of the education sector
- Vocational education and training falls under both regulated (ITIs/ ITCs under Ministry of Labour, Polytechnics under MHRD) as well as unregulated segments (private training schools)

Source: KPMG in India analysis

Market Size

Market size of Education and Skill Development sub-segments (in Rs. crore)



The Indian education and skill development industry[1] grew at an average rate of 13% in the last four years from over Rs. 1.21 trillion in 2008 to over Rs. 2.35 trillion in 2012

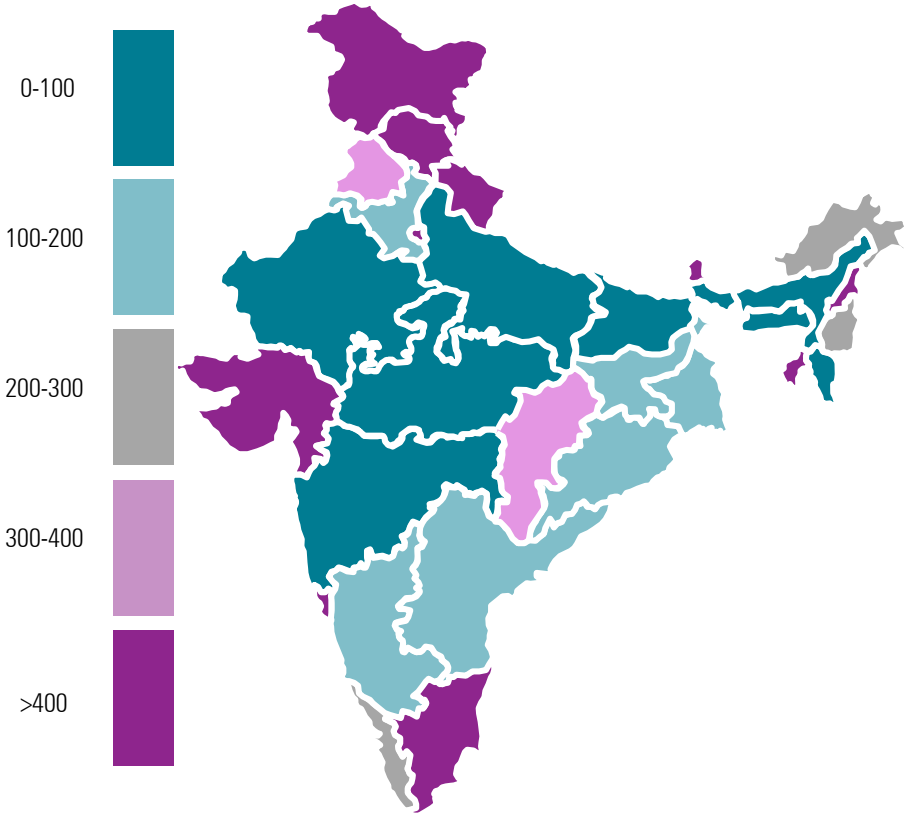
Source: 'Education Sector in India: A Snap Shot' KPMG Presentation at MIT Enterprise Forum

CAGR (2008-14)	
K-12	13%
Higher Education	11%
Vocational Education	22%
Overall	13%

1Definition of market size : It includes the tuition fee for each segment of the industry. For Schooling it also covers the fees spent on textbooks and multimedia used in classroom teaching. The market size of colleges/ higher education includes the tuition fee for courses in engineering, medical and MBA streams

State wise projects and investments

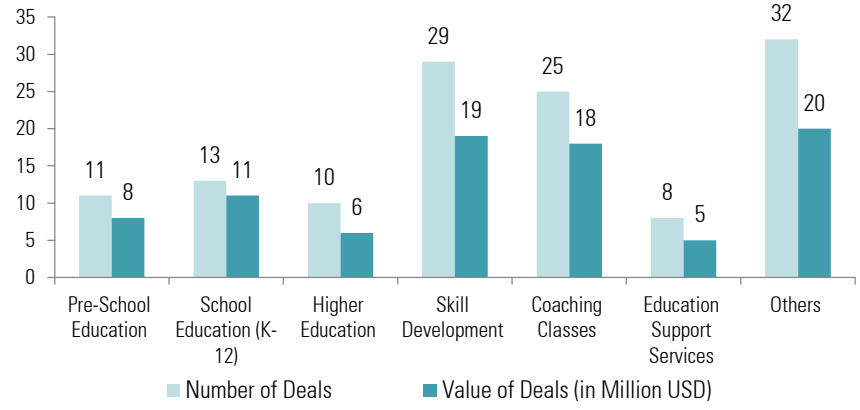
Capital expenditure by state governments on education, sports & culture in INR per person in student age group (0-24 years) in 2013-14



- In 2013-14, the total state capital expenditure on education was INR 110894 million
- Of this, Tamil Nadu had the highest share in the expenditure of about 12%, followed by Uttar Pradesh with a contribution of 8.67% and Gujarat with 6.67% respectively.
- However, in terms of per student investment in education; Sikkim and Goa spent more than INR 2000. Tamil Nadu spent about INR 726 per student in education. States such as Rajasthan and Madhya Pradesh spent as low as INR 37 and INR 40 respectively.

Source: State Budget Finances, Budgeted Estimates (2013-14), RBI

Number and value of private equity deals in education & skill development from 2009-14

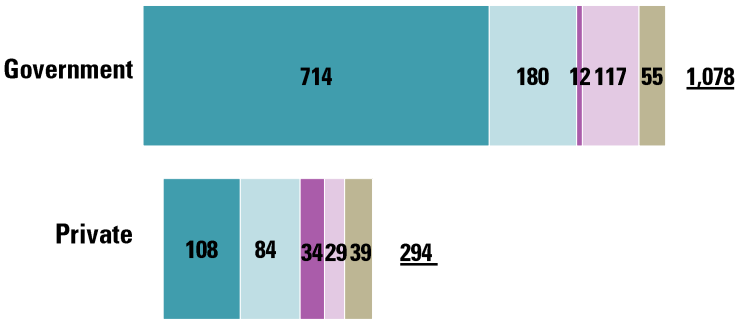


- During the last five years (from 2009 to March 2014), the number of private equity deals in education and skill development sector has valued at USD 87 million (INR 522 Crore)
- Of these, the maximum deals in both number and value are in the vocational training sector, followed by coaching classes

Source: ISI Emerging Markets

School education sub-segment

Number of schools by management type ('000) as of 2011-12

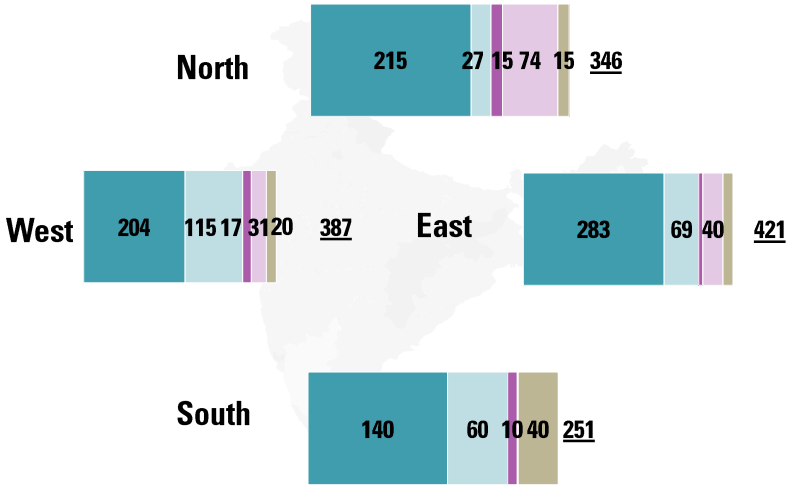


Over 13 lakhs — Number of schools in India, with about 60% of them concentrated in primary alone

79% — is the share of government managed schools of the total

- The number of schools for K-12 has increased from 12.4 lakh in 2007-08 to 13.71 lakh in 2011-12, growing at an average rate of 2.03% during the 5 years
- The privately managed schools have increased at a higher rate of 4.04% as against the government managed schools at 1.52%; there by increasing their share to 21% in 2011-12 from 19% in 2007-08
- Although, more than 65% of the schools in 2007-08 were offering only primary education, their share has decreased to 59% in 2011-12. There has been an increasing preference towards integrated schools offering primary, middle, secondary and higher secondary curriculum

Number of schools in each zone ('000)



4% — Rate of growth of private schools, as compared to 1.5% growth in government schools

30% — is the share of number of schools in eastern region, which accounts for the maximum number across regions

Primary Only
Primary with Upper Primary
Primary with Upper Primary & Sec./Higher Sec.
Upper Primary Only
Upper Primary with Sec./Higher Sec

Source: Analytical Report 2011-12, District Information System for Education

Growth drivers

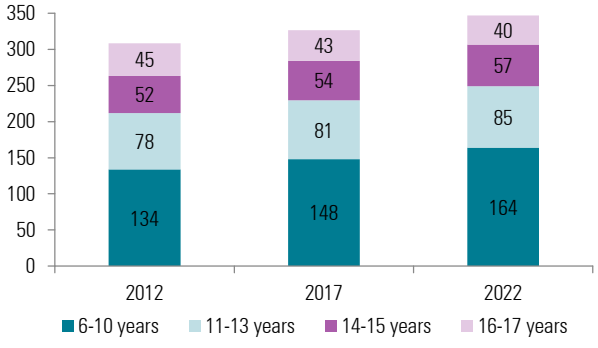
- **Increasing government impetus in successive five year plans**
  - Expansion of **Sarva Shiksha Abhiyan** as the vehicle of universal elementary education;
  - Extension of the **Mid-Day Meal Scheme** and Enactment of **the RTE Act**, 2009;
  - Establishment of the **Rashtriya Madhyamik Shiksha Abhiyan** (**RMSA**) to enhance access to secondary school education

- **Rising disposable income of Indian population -** Number of households earning an annual income of Rs. 2-5 lakh is expected to increase 8 times by 2025

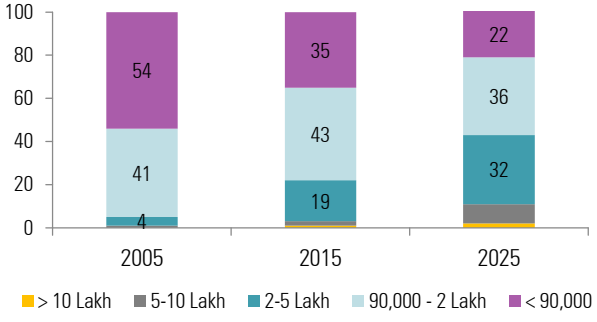
- **Increasing private sector participation -** Share of the privately managed schools has increased from 19% in 2007-08 to 21% in 2011-12, and is growing at a faster rate than government managed schools

- **Increase in population in the target age groups -** Number of people in the age group 6-17 will increase from 308 million in 2012 to 346 million in 2022

Student age group wise population (in million)



Percent of households in various income groups



Income Group	Annual spending capacity on School Education (in Rs.)
> 10 Lakh	1 Lakh
5-10 Lakh	50,000
2-5 Lakh	25,000
90,000 - 2 Lakh	9,000
< 90,000	3,600

Source: Census 2001 and 2011, Historical Annual Time Series on School Education from 2006-07 to 2010-11, Department of School Education and Literacy, Ministry of Human Resource Development and KPMG in India analysis

Emerging trend

Overall Model/ Policy/ Ecosystem

- Huge demand in urban micro markets is driving private sector interest in schooling
- Private professional management companies are interested in acquisition/ setup of school chains
- Benchmarking studies such as PISA (international) and ASER (Indian) are putting the spotlight on quality of schooling education and its need to improve

Curriculum, Assessment and Certification

- International boards like IB (about 3.5 times in sine 2006) have increased supply for the upper middle class with global aspirations
- Impact of CCE CBSE system has led many school administrators and teachers to undergo re-skilling and adaptation to new assessment patterns

Content

- Many new players from diverse backgrounds such as media, internet companies, mobile phone platform providers etc. could look at adjacencies in the schooling content space
- Content creators and allied manpower roles could become increasingly important as the sector increasingly moves towards more interactive and engaging content across multiple delivery channels

Delivery

- Increased adoption of ICT and Multimedia tools in private and public schools alike
- Huge future potential for 'informal' learning and flipped classroom models that could have implications for manpower requirements and skills in the sector

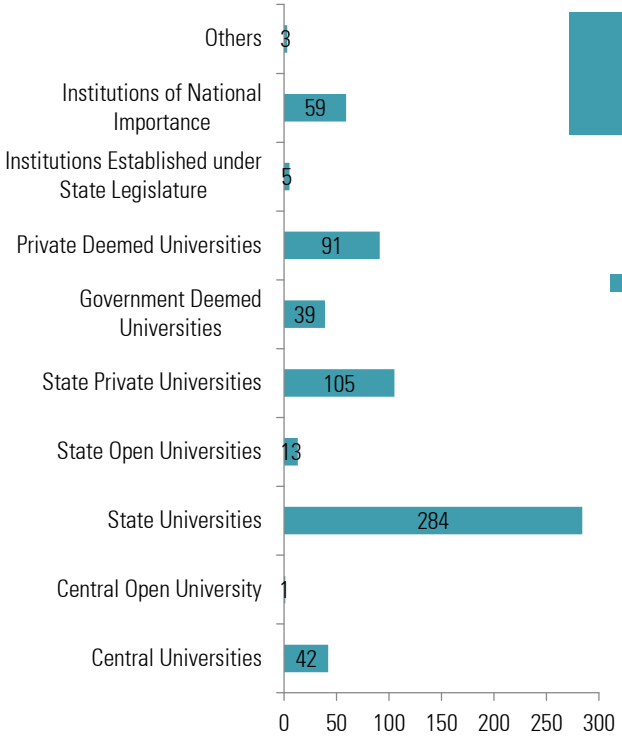
Source: KPMG in India analysis

Higher education sub-segment

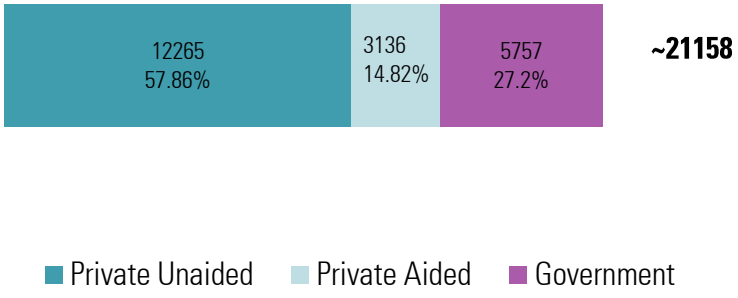
Introduction

- The higher education system consists of central universities, state universities, deemed universities, Institutions established under state legislations, institutes of national importance established by central legislation and agriculture, veterinary, medical including Ayurveda and open universities.
- The University Grants Commission (UGC) is the apex body which looks after the higher education system in the country. The technical education system covers courses in engineering, technology, architecture, pharmacy, etc. and caters to programmes at the undergraduate, post graduate and research levels. The All India Council for Technical Education (AICTE) is the statutory body for the planning and co-ordination for the development of technical education system.
- By 2007, the Indian higher education system has grown to be the largest in the world with 378 universities, 8064 colleges and faculty strength of 0.492 million and an estimated enrolment of 14 million students.
- As of 2011-12, there are 642 universities in India comprising of 284 state universities, 41 central, 59 institutes of national importance established under the central legislator and among others. Apart from these, there about 30,000 colleges and polytechnics that offers a range of programs including certificate courses, diplomas, degrees in various fields of arts, science, humanities and others.

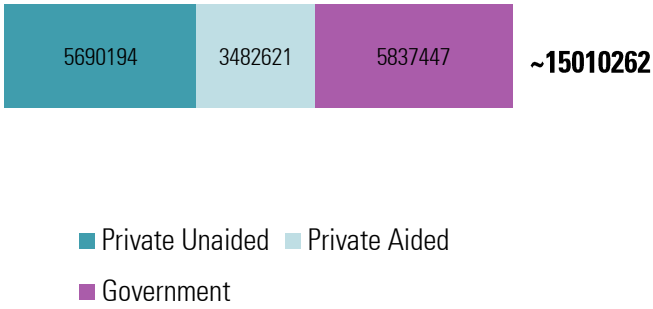
Number of universities as of 2011-12



Number of colleges as of 2011-12 (management wise)



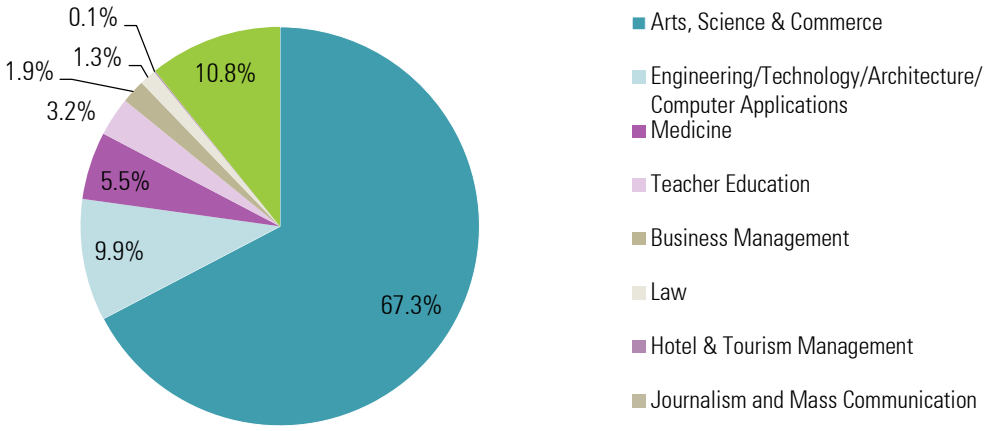
Enrolment in colleges as of 2011-12



Source: All India Higher Education Survey, 2011-12, MHRD

Segmentation by field and geography

Segmentation of India's over 22,000 colleges by fields of study*

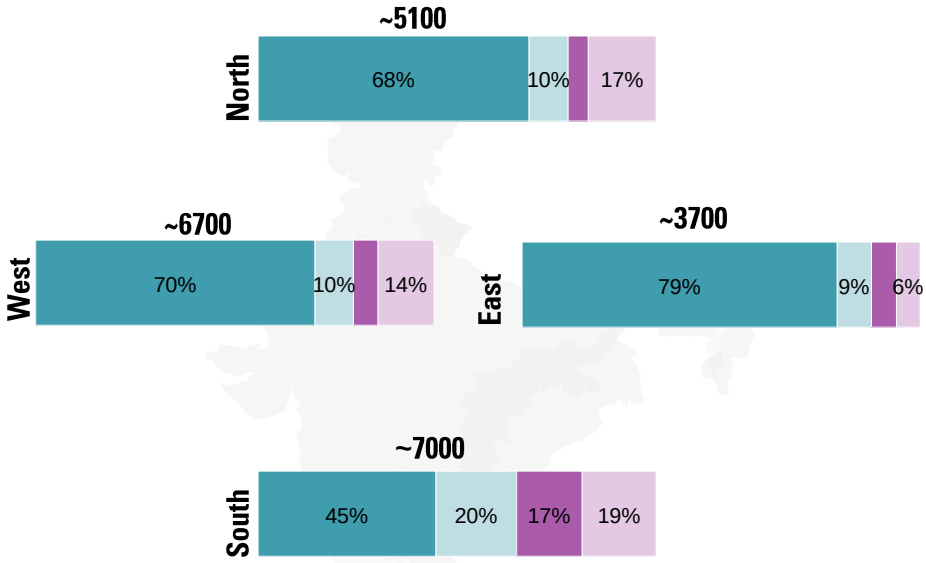


Source: All India Higher Education Survey, 2010-11, MHRD

Over* 30,000 colleges in India offering degree, doctoral, diploma and certificate programs across many streams

* As per data of MHRD 2010-11, there is segmentation of colleges based on subjects . According to this data there are 22000 colleges. However, as per 2012-13 MHRD data for higher education - the preliminary release of the All India Higher Education Survey indicates 30000

Geographical segmentation of India's colleges (number of colleges)



Source: All India Higher Education Survey, 2011-12, MHRD

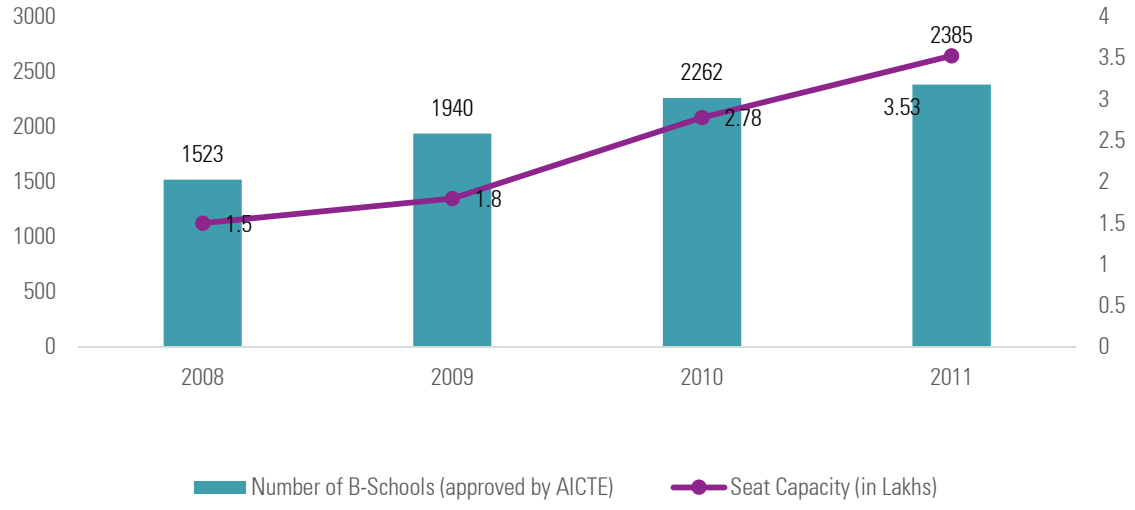
Segmentation by field and geography

The higher education sector has witnessed an increased demand for B-Schools in the last decade

16% growth in the number AICTE affiliated business schools from 1,149 colleges in 2007 to 2,385 colleges in 2011

18% of the business schools are autonomous institutes (not affiliated to AICTE or are deemed by UGC)

Number of AICTE approved B – schools in India with seat capacity



Source: All India Council of Technical Education

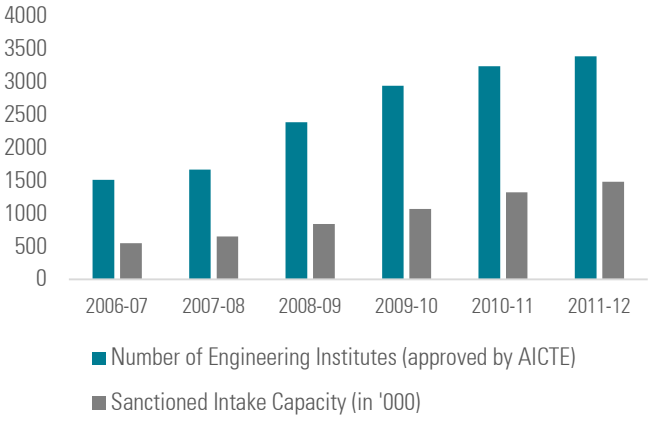
- Around 3,500-4,000 business schools currently operate in India, offering over 4 lakh seats. With the increasing demand for MBA education, the number of institutes has increased manifold in the country. Since 1988, the number of business schools has grown by more than 16 times as of 2010.

- Of the total business schools operating in the country, it is estimated that around 82 per cent are either affiliated to AICTE or state universities in India. The remaining 18 per cent constitutes of autonomous institutes, (which account for 17 per cent and are majorly private colleges not affiliated to AICTE or any other university), while 1 per cent are universities which are declared deemed by UGC.

- For the colleges that are affiliated with universities, the curriculum and the fees structure are regulated by the university and the college actually has very little autonomy. Deemed universities like Narsee Monji Institute of Management Studies, etc are approved by UGC to confer the certificate of Post Graduate Diploma in Management to the students of the college. However, the autonomous institutes do not adhere to guidelines laid down by AICTE. Some of the autonomous institutes which are not approved by AICTE are Indian School of Business-Hyderabad

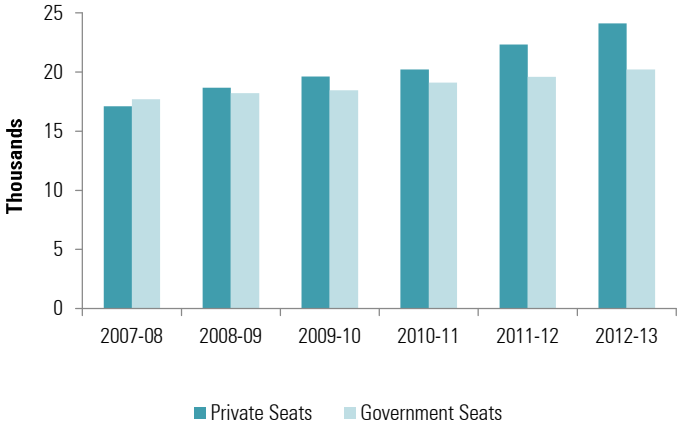
Segmentation by field and geography

Number of engineering institutes approved by AICTE and intake capacity



Source: All India Council of Technical Education

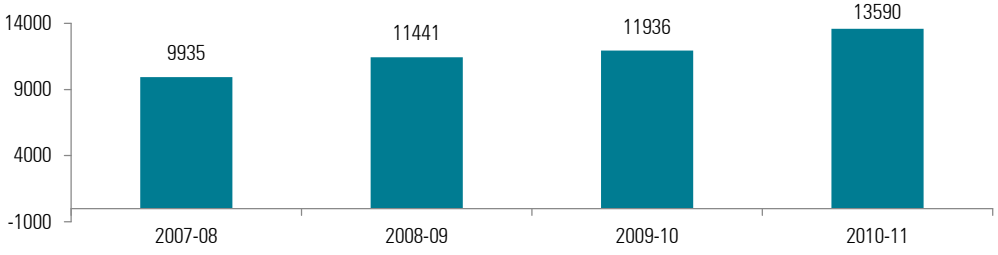
Total number of government and private seats for medical education



Source: Medical Council of India

- There are around 3,500-4,000 engineering colleges currently operating in India, offering around 15 lakh seats. The number of colleges approved by AICTE have increased over the last 3 years, reaching around 3,393 and registering a CAGR of 12 per cent; the sanctioned intake increasing at a CAGR of 21 per cent, reaching a total capacity of 14.82 lakh.
- In India, the top six states (according to intake and quality of education) namely, Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka, Madhya Pradesh and Uttar Pradesh account for almost 65 per cent of the total intake across engineering colleges.
- Private players are allowed to open medical colleges in India provided that they are run by a trust, a society or a non-profit organization. Further, a medical college and a teaching hospital will have to be owned by the same entity. These private players will have to meet all the specifications in terms of infrastructure, occupancy and staffing for the college to be recognised by the Medical Council of India.
- Currently, private colleges account for about 54 per cent of the total Bachelor in Medicine, Bachelor in Science (MBBS) seats in India. Due to comparatively lower capital requirements in other streams of higher education, the proportions of private colleges are far higher for business schools at 95 percent and for engineering colleges at 80 per cent.

Number of colleges offering arts, fine arts, social work and science programs



Source: All India Higher Education Survey, 2007-11, MHRD

Growth driver

Supply

- **Increasing government impetus in successive five year plans**
  - The Central Government Expenditure on Higher Education has increased from 13.54% of the total expenditure on Education (by MHRD) in 2007-08 to 19.98% in 2012-13;
  - Rashtriya Uchchatar Shiksha Abhiyan (RUSA) conceptualised in Sept. 2013 would form a major component oh higher education reform in India for the 12th Plan
- **Increasing private sector participation**
  - Between 2010-13, the number of private sector deals in higher education amounted to USD228 million, accounting for 23% of the total deals in the education and skill development sector .
  - About 73% of the colleges are managed by private players (i.e. 15,408 colleges of total 21165) as of 2011-12
  - With the design of private university models, over 100 private universities has come up in many parts of India in the last decade

Demand

- **Policy drive to improve gross enrolment ratio in higher education institutes**
  - Along with increased number of higher education institutes, the level of enrolment into them has increased four times from 2.75 million in 1980-81 to 11.03 million in 2005-06
  - The gross enrolment rates in higher education institutes are expected to reach 16.4 per cent by 2016-17 from 14.4 per cent estimated in 2011-12
  - Enrolment in private unaided institutions is estimated to have increased from 16% in 2006-07 to 20% in 2011-12. This is expected to increase in the future driven by various PPP models under consideration
- **Increasing Population in the age group of 15-24 years**
  - By 2016, nearly 50 per cent (117 million) of the total population in the educational age group (15-24) would belong to this category

Emerging trend

Overall Model/ Policy/ Ecosystem

- Global mobility - Increasing affordability and willingness to spend on overseas higher education especially in English speaking countries by students. Faculty are also emigrate, drawn by better prospects for research in developed countries outside India
- Increasing private sector participation in setting up new universities and institutions
- Foreign institutions, in addition to direct recruitment of Indian students, are looking at programmatic collaborations with Indian universities,

Curriculum, Assessment and Certification

- Increasing awareness amongst top quality institutions on the importance keeping abreast of industry changes and the need for involving industry inputs while reviewing and updating curriculum
- Policy innovations like meta-universities have potential to increase the breadth of courses that could be on offer, and also allow universities to better realize synergies

Content

- Pedagogical Innovations like Massive Online Open Courses (MOOCs) offered even by Ivy League universities are challenging the value of content in the education value chain
- Content creators and allied manpower roles could become increasingly important as the sector moves towards more interactive and engaging content across delivery platforms

Delivery

- Technology is likely to play an increasingly important role in delivery, accentuated by the fact that there is a severe lack of quality faculty

Vocational training sub-segment

Introduction

Government managed/ regulated supply for vocational education has traditionally been the mainstay of the skill development segment until recently

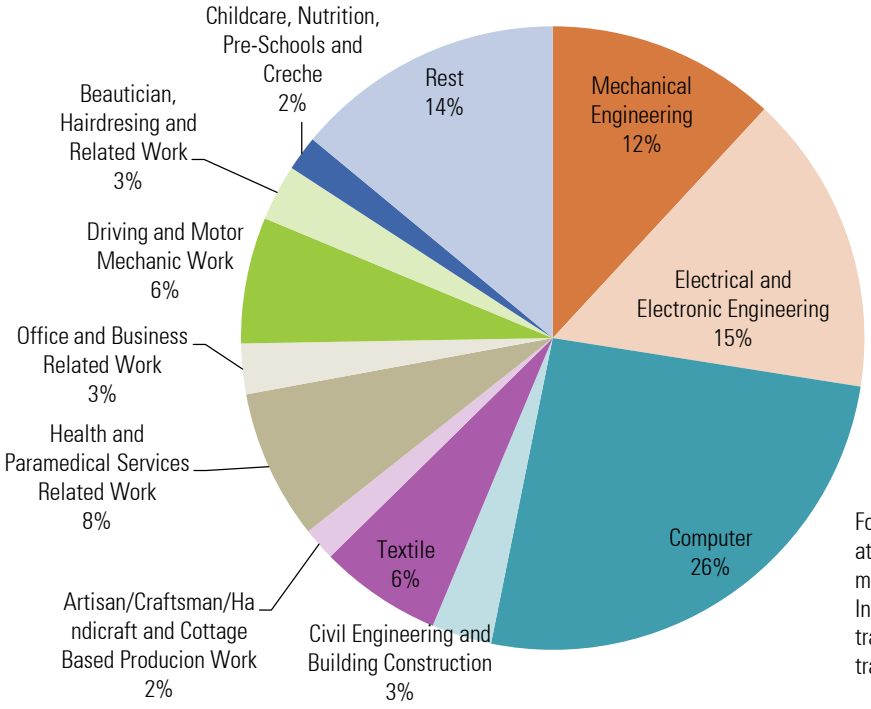
- Over 10,300 ITIs and ITCs in India offering vocational training across a diverse set of trades
- Over 14.6 lakh seating capacity in India for vocational training courses offered by the ITI and ITC framework

Geographical Distribution of ITI/ITC

Region	Number of ITI/ITCs	Seat Capacity
North	4,755	643,485
South	3,457	443,387
East	794	140,764
West	1,338	241,100
Total	**10,344**	**14,68,736**

Source: Indiastat

Segmentation of student population receiving formal vocational training – by trade categories



Only **23%** of the population receiving or already received some form of technical education, chose to attend industrial training institutes

An estimated **40-60 lakh** people received formal vocational training in the past year

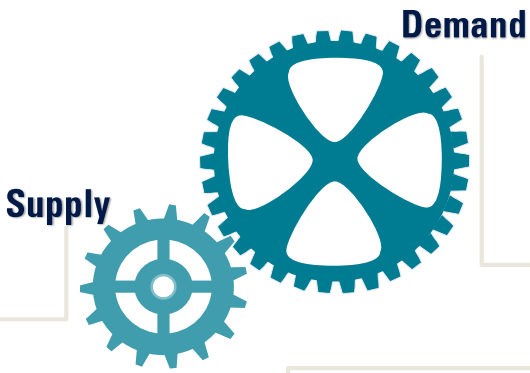
Formal vocational training includes all those who attended institutes for courses from less than 3 months, 3 -5 months, 6 months and more than a year
Informal training includes those persons who received training through hereditary, self learning or on the job training.

Source: Status of Education and Vocational Training in India, 66th Round, MOSPI – 2009-10

Growth drivers

- **Policy support**
  - With the passage of the new Companies Bill, there is increased interest amongst corporate to look at spending on skill development initiatives as part of CSR to create shared value

- **Increasing absorption of dropouts from mainstream education who are seeking a career or skill upgrade**



- **Regulatory structure -** Unlike the education sector; for profit training institutes can be set up. This, coupled with NSDC initiatives has encouraged, the private sector to aggressively set up institutes within vocational training

- **Increasing private sector participation**
  - Establishment of NSDC which is spearheading private sector initiatives in skill development, has helped to aggressively set up institutes offering vocational training
  - Corporate interest has increased in the skill development supply space, due to benefits that can accrue to their own manpower and businesses
  - Of the $1 billion was invested in education over the past three years, 2010 to 2013; about 10% of this total investment was in vocational training*

- **Increasing awareness amongst Indian employers and population**
  - NSDC's setup and progress have created an eco system for increased awareness and thrust towards skill development in both government and private sectors employers and the Indian population
  - Setup of the NSQF under NSDA is expected to facilitate increased adoption of skill development programs due to availability of pathways for progression between higher education and skill development

Emerging trends

Overall Model/ Policy/ Ecosystem

- A multipronged policy approach to enable skills development (including but not limited to initiatives such as setup of SSCs, definition of Occupation Standards, definition of NSQF framework, funding initiatives such as STAR scheme) are likely to create a widespread positive impact on the skills ecosystem in India over the next 3-5 years
- A lot of organizations/ governments from advanced countries are keen on assisting domestic providers and policy makers in addressing the skills challenge. Given the unprecedented scale of the challenge in India, relationships with such foreign institutions is likely to prove mutually educative and rewarding in the understanding of skill development models

Curriculum, Assessment and Certification

- Sector Skill Councils, established with the support of NSDC are creating National Occupational Standards which helps to standardize curriculum for training sector specific trades, functions with increased levels of industry relevance
- Traditional institutions, such as ITIs which are undergoing conversion under PPP modes of operations are also seeing positive shifts towards industry relevant curriculum and assessment
- Assessment and Certification is developing as a standalone service offering by training organizations, though industry leaders believe that the market maturity for certifications will take more time to develop

Content

- There is increased focus towards multimedia content especially by those training providers who have a need to standardize content and delivery quality when operating large scale networks across difficult terrains
- Content especially for soft skills training are increasingly geared for development in a multimedia mode to increase their accessibility and relative ease of adaptation

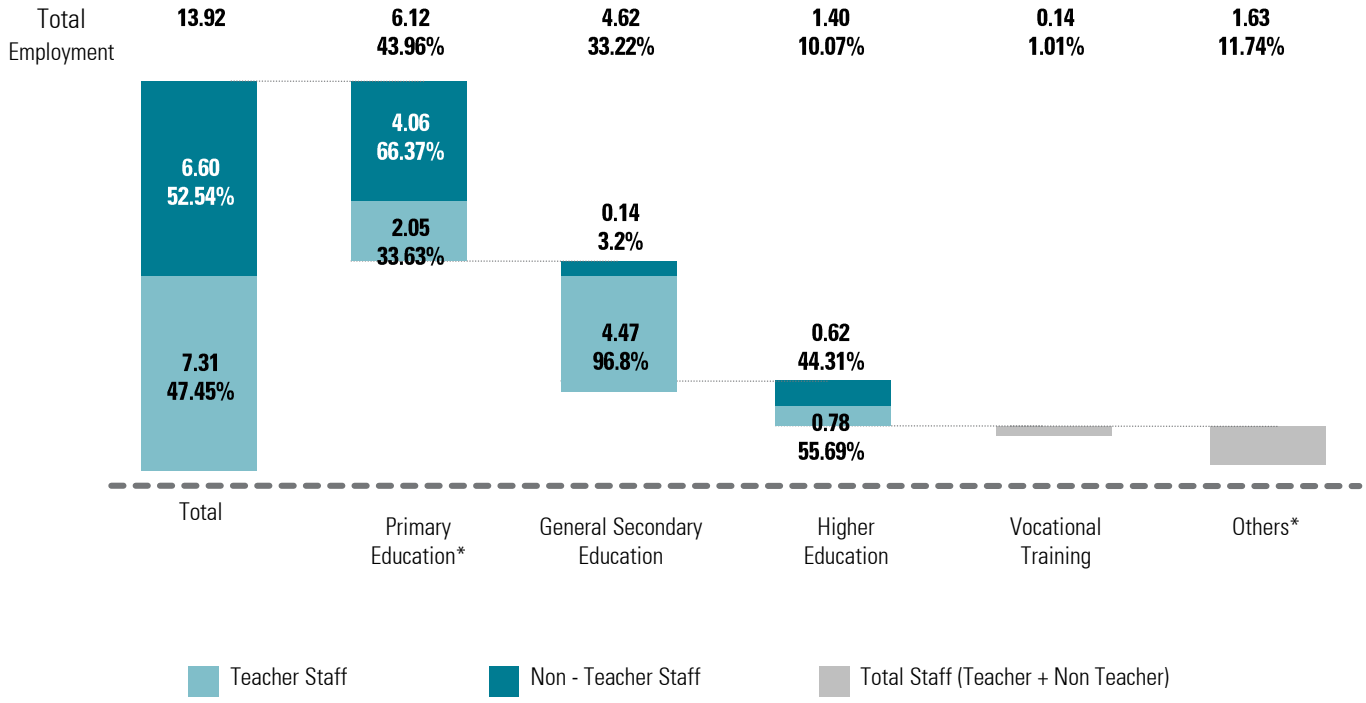
Delivery

- Innovative training models such as mobile training centers, multi-skill development centres etc. are likely to increase in the future, given the nature of training required and the necessity for application at the actual work spots
- Technology is likely to play a huge role in not just delivery, but in all aspects of project management of large scale training programs

Demographic and workforce characteristics

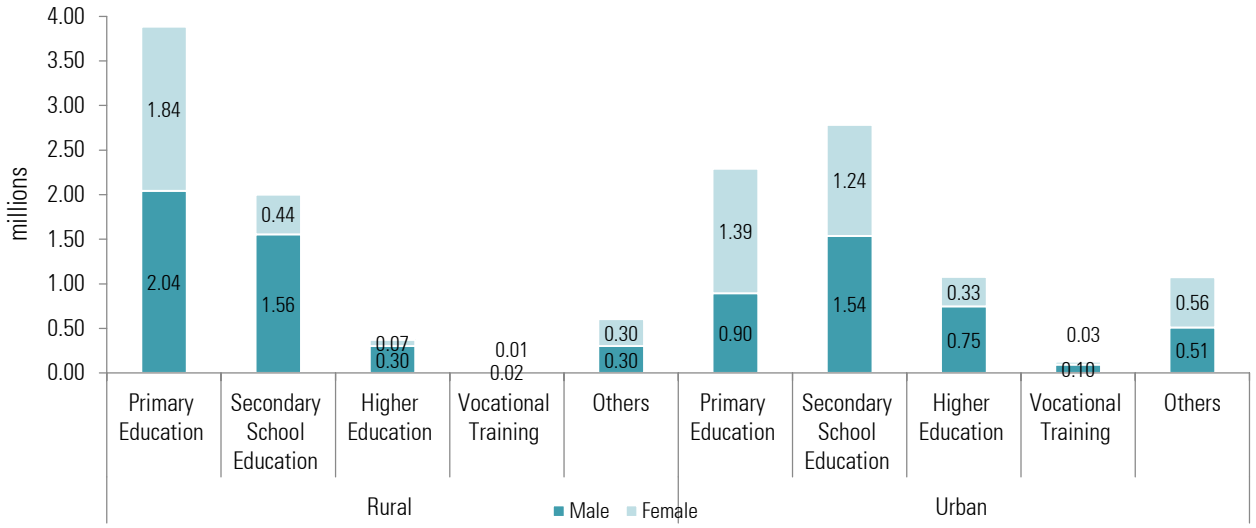
Employment by sub-sectors and gender

Distribution of employment across sub sectors (as of 2011-12) in millions



Source: NSSO 66th Round, 2011 – 12 and KPMG in India analysis

Gender distribution of workforce (as of 2011-12)



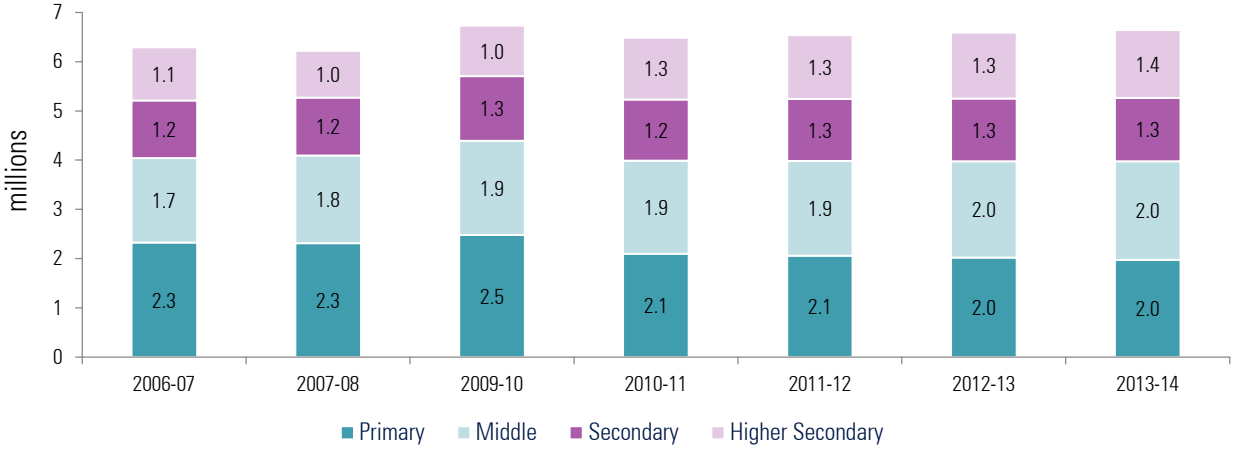
Source: NSSO 66th Round, 2011 – 12 and KPMG in India analysis

Employment by sub-sectors and gender

School education

Of the total1.07 crore persons employed in the school education sector, about 67 lakh are employed as teachers.

Trends in teacher employment in school education



Source: Historical Statistics in School Education, MHRD & KPMG in India analysis

Number of teachers (as of 2011-12) as per school category

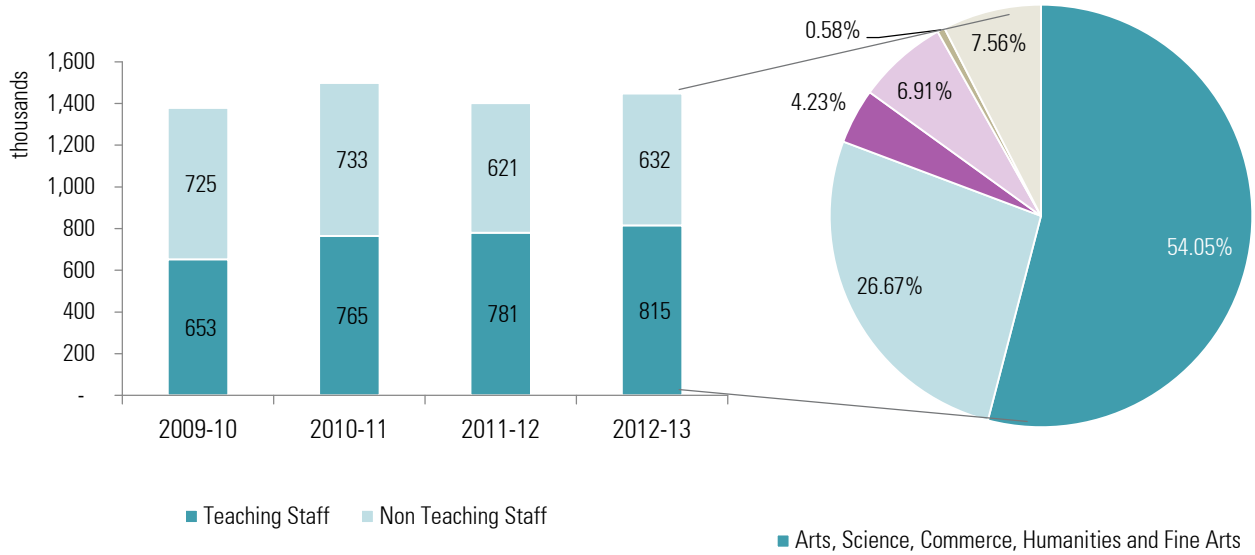
Source: DISE Data, Analytical Tables 2011-12

Employment by sub-sectors and gender

Higher education

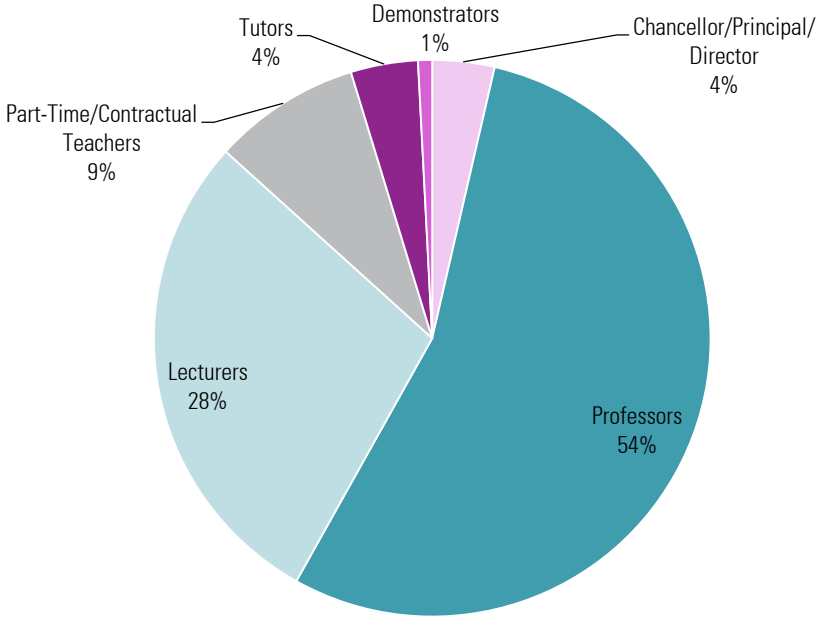
About 50% of the 14 lakh staff employed in higher education sector are teaching staff

Trends in employment in higher education - teacher and non teacher staff



Source: All India Higher Education Survey, 2009-13, NSSO – 66th Round and KPMG in India analysis

Distribution of teacher staff (as of 2012-13) as per positions



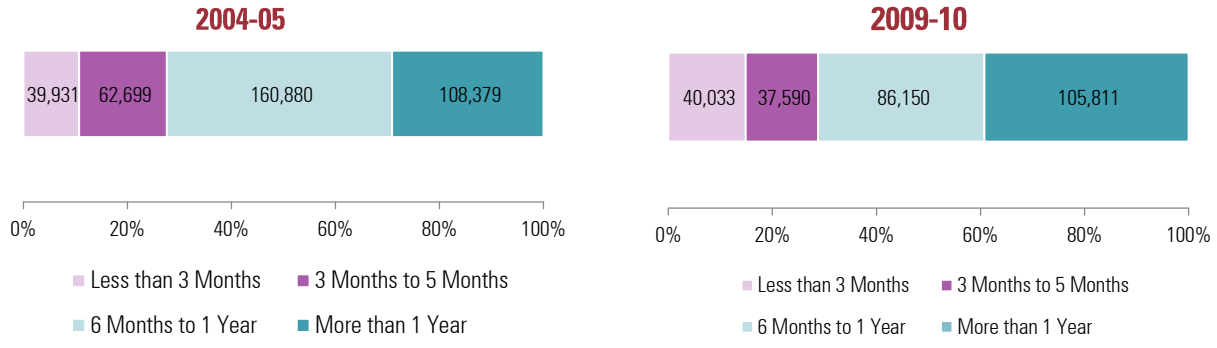
Source: All India Higher Education Survey, 2012-13

Employment by sub-sectors and gender

Vocational education

More than 30% of the teachers are employed for conducting classes with a period of 6 months to 1 year

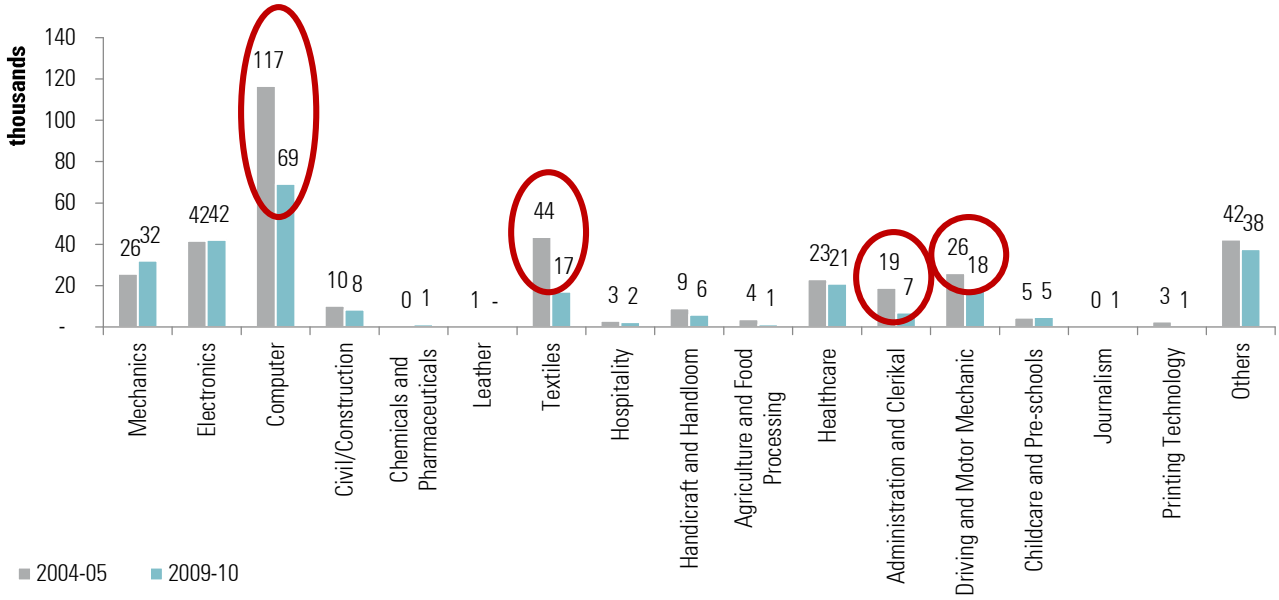
Trends in employment in vocational training – number of full time teachers (FTTs) as per course duration



Source: NSSO 64th and 66th Round, Status of Education and Vocational Training in India & KPMG in India analysis

- Full time teachers (FTTs) refer to the number of classes which would require a teacher. It does not indicate the number of teachers in vocational training, as the same teacher could be used for offering courses which could be of 6 months or even 3 months or a year.
- From 2004-05 to 2009-10, the number of FTTs have decreased from 3.71 to 2.69. This is because the number of FTTs engaged in more than 1 year programs have increased, there by providing them no scope to undertake simultaneous courses of 3 or 6 months
- Also, the number of FTTS have decreased in computer and informational technology, probably due to online course or in – school learning.

Number of full time teachers (FTTs) – subject/ sector wise



Source: NSSO 64th and 66th Round, Status of Education and Vocational Training in India & KPMG in India analysis

Government policies

Policy level initiatives by the centre

Right of Children to Free and Compulsory Education Act, 2009	The RTE has important implications on the quality of teachers and their employment in schools: ▪ The Central Government shall develop and enforce standards for training of teachers; ▪ Persons possessing minimum qualifications, as prescribed by an academic authority authorise by the Central Government, shall be eligible to be employed as teachers; ▪ Existing teachers not possessing such prescribed qualifications would be required to acquire that qualification within a period of 5 years. ▪ The Government must ensure that the Pupil-Teacher Ratio specified in the Schedule is maintained in each school ▪ Vacancy of a teacher in a school, established, owned, controlled or substantially financed by the Government, shall not exceed 10% of the sanctioned strength.
Right of Children to Free and Compulsory Education Act, 2009	▪ The Act considers National Council for Teacher Education as a statutory body of the Central Government, responsible for planning and coordinating development of teacher education in the country. ▪ The NCTE lays down norms and standards for various teacher education courses, minimum qualifications for teacher educators, course and content and duration and minimum qualification for entry of student-teachers for the various courses. ▪ It also grants recognition to institutions (government, government-aided and self-financing) interested in undertaking such courses and has in-built mechanism to regulate and monitor their standards and quality
Latest Norms and Standards (2009)	The NCTE has released the Latest Norms and Standards to be followed by teacher education institutes to train and certify teachers with the following diplomas and degrees: ▪ Diploma in Early Childhood Education (D.E.C.Ed) ▪ Diploma in Elementary Education (D.El.Ed.) ▪ Bachelor of Elementary Education (B.El. Ed.) ▪ Bachelor of Education (B.Ed) ▪ Master of Education (M.Ed) ▪ Diploma in Physical Education (D.P.Ed) ▪ Bachelor of Physical Education (B.P.Ed) ▪ Master of Physical Education (B.P.Ed) ▪ Diploma in Arts Education (Visual Arts) ▪ Diploma in Arts Education (Performing Arts)

Policy level initiatives by the centre

National Mission on Education through Information, Communication and Technology (ICT)	▪ The Mission was launched in 2008, which an initial budget of INR 502 crore to enhance use of technology in all segments if education sector. Some of its objectives include - spreading digital literacy for teacher empowerment, experimentation and field trial in the area of performance optimization of low cost access/devices for use of ICT in education and providing support for the creation of virtual technological universities. ▪ The Mission shall also work for scaling up of the existing Education Help line - 'One Stop Education Portal'- "SAKSHAT'. The helpline shall take care of all the needs of the entire learning community including the students enrolled in various educational institutions and lifelong learners by extensively utilizing e-learning concepts and the ICT based methodology.
National Assessment and Accreditation Council (NAAC)	▪ NAAC lay special emphasis on evaluating the quality of higher education in India ▪ Under the new methodology introduced by NAAC w.e.f. 1st April, 2007, the higher education institutions are assessed and accredited by a two-step approach. – In the first step, the institution is required to seek 'Institutional Eligibility for Quality Assessment (IEQA)' and – The second step is the assessment and accreditation of the institute under the grades 'A', 'B', 'C' for accredited institutions; and 'D' for those which are not accredited. NAAC has identified seven criteria- i. Curricular aspects, ii. Teaching-learning and evaluation, iii. Research, Consultancy and extension, iv. Infrastructure and learning resources, v. Student support and progression, vi. Governance and leadership and vii. Innovative practices as the basis for its assessment procedure
National Policy on Skill Development	Mission is to 'empower all individuals through improved skills, knowledge, nationally and internationally recognised qualifications to gain access to decent employment and ensure India's competitiveness in the global market'. It has a target to skill 500 million people in the labour force by 2022
National Council for Vocational Training & State Council for Vocational Training	NCVT would be a central agency for co-ordinating the training programmes in the country, bringing about uniformity of standards and awarding certificates of proficiency in craftsmanship on an all India basis. The State Councils have been established to assist the National Council.

State wise policy initiatives

Gujarat	▪ **Gujarat Skill Development Mission** ▪Objective is to create an overarching integrated framework for action for skill development and to act as apex body for monitoring, coordination, convergence and providing overall policy direction for skill development activities in Gujarat ▪ **Gujarat Council of Vocational Training** ▪Designs syllabus of all trades and conducts examinations for those ITIs and ITCs registered with GCVT ▪ **Swami Vivekananda Recruitment Fair** being undertaken on a quarterly basis (beginning in 2012) ▪Mega Fair – **Recruitment Drive for Supervisor Teachers** conducted in 2011
Tamil Nadu	▪ **Teachers Recruitment Board** ▪The Teachers Recruitment Board, established in 1987; has now been designated as the nodal agency for conducting Teachers' Eligibility Test (TET) based on the latest standards and norms released under the National Council on Teacher Education (NCTE). ▪ **Tamil Nadu Skill Development Corporation (TNSDC)** ▪A non – profit company established to impart employable skills to the unemployed youth in Tamil Nadu and to transform Tamil Nadu into a Skill Hub within a time bound Programme. ▪Aims to implement an exclusive program of IT Skill Training to 5000 students of Govt. Engg, Arts and Science colleges through ICT. ▪Another area of focus is textile industry, with current numbers of people being skilled are 6,500, mainly in backward class. ▪A total of 750 instructors from Govt. ITI are being trained in different areas to update their subject knowledge in tune with Technology Development and Industry demand. **The Faculty Development Program** is being implemented through National Small Industries Service Centre, Advance Training Institute and Entrepreneurship Development Institute
West Bengal	▪ **Rules for Selection to the Post of Teachers (2011)** ▪In response to the RTE (2009), the School Education Department of Government of West Bengal has made amendments to the West Bengal School Service Commission Rules – 2007 ; underlying revised standards and norms for recruitment of teaching and non-teaching faculty in state schools

State wise policy initiatives

Rajasthan	▪ **Guidelines for Establishment of Private Universities by Separate Act (2006)** ▪Since the release of these Guidelines, the Government of Rajasthan has issued over 30 NOCs permitting the private sector to establish new colleges and higher education institutes ▪ **Industry Institute Interaction Cell** – The main objectives of IIICs are creation of a rapport between industries and institutions by way of organising training of staff and students in industries, counselling of students, arranging visits of faculty and students to industries, organising extension lectures of experts from industries, organising campus interviews, arranging students projects based on industrial problems, preparation of profile of industries in their region, to appraise the industries with the facilities of testing etc. available in the institute and arrange to organise the **training of staff** from industries in particular fields if there is any such requirement from them. – These cells are interacting with the industries under their zone, covering the district where the cell is situated, as well as with the industries of some other districts where no such cell is existing
Karnataka	▪ **School Nurturing Program** – A programme to link the nurturers and the needy schools for development as centers of excellence, to recognize the efforts of the nurturers and to streamline the process of linking up. – Focus on in – service training of teachers and capacity building – About INR 7,700 crore constituting 15% of the total state government expenditure, has been allocated to school education ▪ **School Development and Monitoring Committee** In order to ensure community ownership and community participation in education the Government has evolved this system of having for each Government school a School Development and Monitoring Committee. Apart from others, the main members of this committee will be 9 parents whose children are studying in the said school. The SDMC has been given necessary powers and functions for ensuring that the schools are managed better and most of the issues relating to the academic aspects and developmental activities of the schools are addressed to by SDMCs.

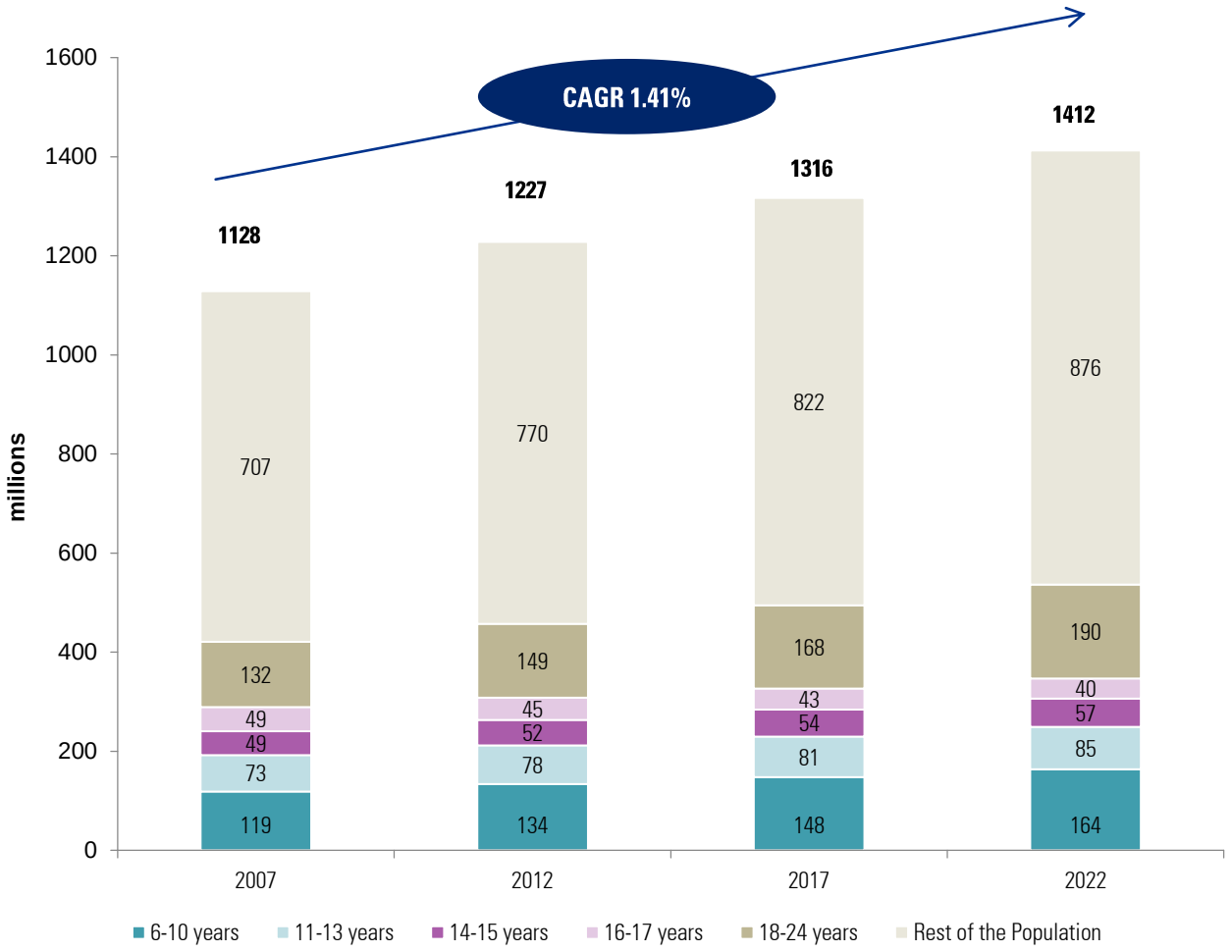
State wise policy initiatives

Andhra Pradesh	**Rajiv Education and Employment Mission (2011)** A joint mission including nine departments of the Government of Andhra Pradesh, including Labour, Employment and Training; it has the following objectives: – Train and place 15 lakh youth by 2014 – Co-ordinate among public and private agencies for a Joint Action Plan – Re-orient curriculum in higher and technical training based on industry requirements – Set uniform quality standards, establish processes and monitor skill Upgradation programs – Co-ordinate with NSDC and other ministries for funding support
Uttar Pradesh	▪ **ICT Plan for Secondary Education** Aims to promote ICT in 2500 middle and secondary schools on a BOOT basis ▪ **Standards for New Colleges** The Higher Education Department, Government of Uttar Pradesh has laid norms for setting up new colleges offering degrees and diplomas ▪ **Uttar Pradesh Skill Development Mission (2013)** The Uttar Pradesh Government under the aegis of Vocational Education Department is in the process to set up a skill development mission to skill 2.5 million people in the age of 15-35 years, especially school drop outs in partnership with industries in the state
Haryana	▪ **Haryana Education Policy (2000)** The State's policy focuses on supporting the teachers to help them in improving their knowledge and skills in pedagogy and child- oriented learning. ▪ **Faculty Training Program** Haryana Industrial Training Directorate has initiated a program to train faculty members to ensure quality training to the youth, make them employable and increase the ties with the industries. Some of the programs for training include financial management and organizational behaviour for the principal of the industrial training institutes. These were held in 2013 with the Haryana Institute of Public Administration.

Incremental human resource requirements (2013-17, 2017-22) and skill gaps

Estimation of student growth

Future estimations of student age population

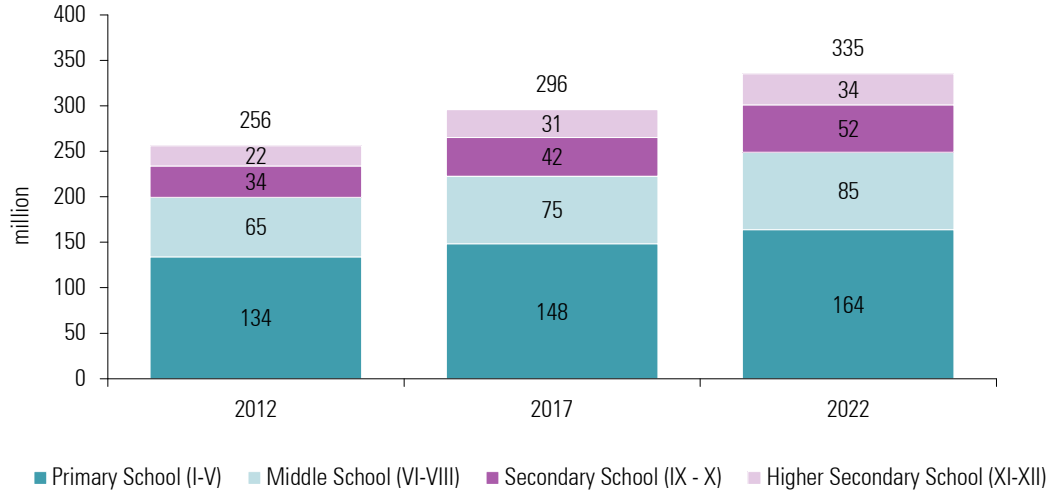


Source: Census 2001 & 2011, MOSPI and Population Projections in Historical Data on School Education, MHRD and KPMG in India analysis

- The number of people in the 'student – age group (5-24)' as a percent of total population has fallen from 42% in 2001 to 40% in 2011.
- However, the population in the age groups of 6-17 has increased considerable; now accounting for 25% of the total population. This population is expected to increase from the current level of 308 million to 346 million in 2022.
- The large size of the student population indicates a pressing need for school education at all levels of pre-primary, primary, middle and secondary

Estimation of student growth

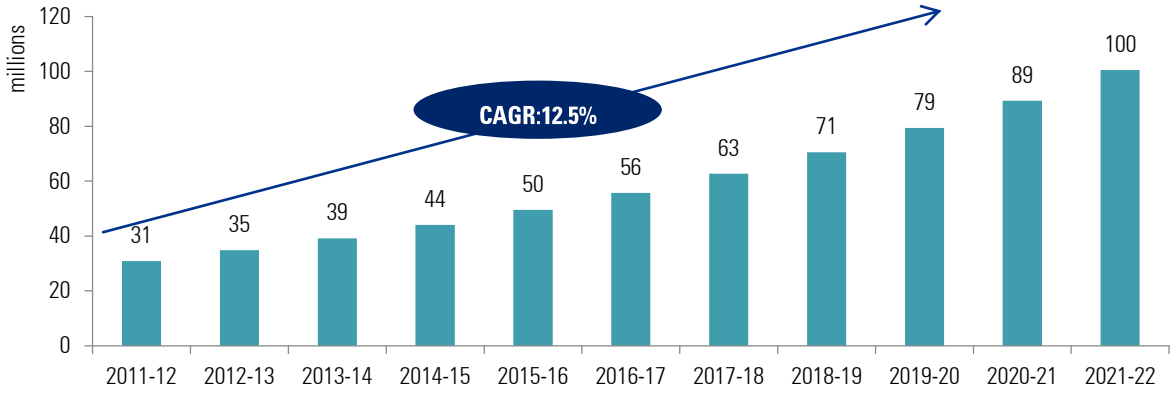
Number of enrolled students in school education



Source: School Education Statistics 2007-08, 20011-12, MHRD, 12th Five Year Plan Documents and KPMG in India analysis

- Number of students enrolled in Primary school is expected to grow from 134 million in 2012 to 164 million in 2022
- Number of students enrolled in Middle school is expected to grow from 65 million in 2012 to 85 million in 2022
- Number of students enrolled in Secondary school is expected to grow from 34 million in 2012 to 52 million in 2022
- Number of students enrolled in Higher Secondary school is expected to grow from 22 million in 2012 to 34 million in 2022

Number of enrolled students in higher education and gross enrolment ratio

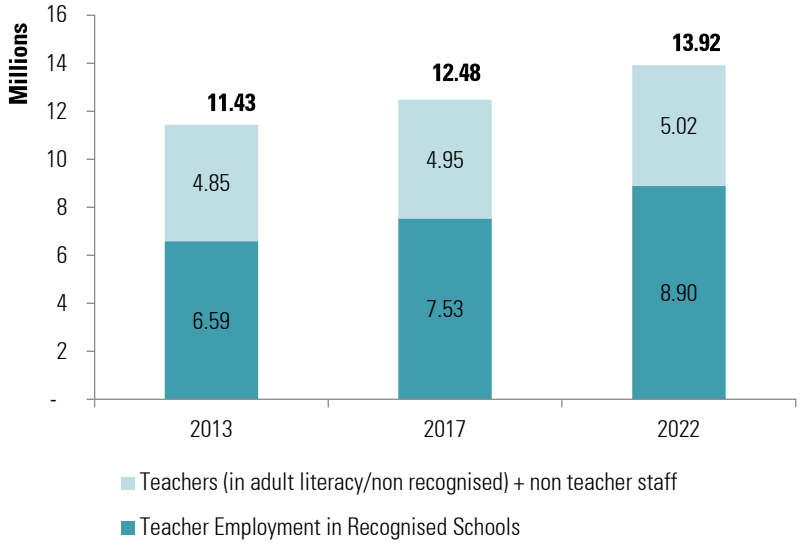


- 21.3% ss the current GER (2011-12) for higher education
- 46% is the expected GER in higher education by 2021-22
- 30% is the target GER in higher education as stated by the UGC under the 12th Five Year Plan

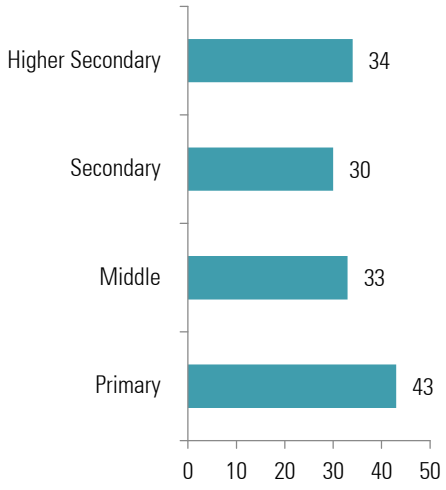
Source: Historical School Education Statistics, MHRD; and KPMG in India analysis

Future employment structure – school education growth

Distribution of Workforce in School Education



Current Student Teacher Ratio (as of 2011-12)

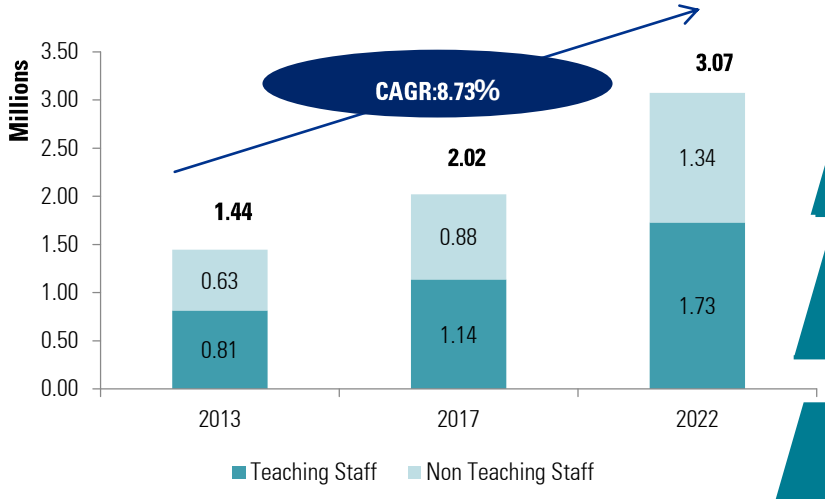


1:40 Is the Student – Teacher Ratio Norm in Primary Education (I-V) as per RTE

1:35 Is the Student – Teacher Ratio Norm in Middle School Education (VI-VIII) as per RTE

Source: Historical School Education Statistics, MHRD; RTE 2009; NSSO 2009-10, 2010-11 and 2011-12; and KPMG in India analysis

Distribution of Workforce in Higher Education



56.3% Is the teaching staff of the total workforce in Higher Education

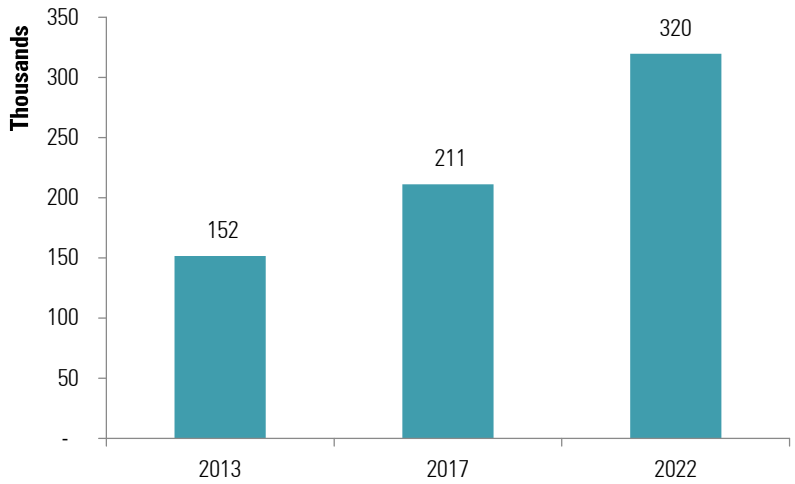
1:25 Is the current Student – Teacher Ratio in Overall Higher Education as of 2011-12

1:10 Is the Norm for Student Teacher Ratio by AICTE

Source: All India Higher Education Statistics, MHRD; RTE 2009; NSSO 2009-10, 2010-11 and 2011-12; and KPMG in India analysis

Future employment structure – vocational training

Workforce Requirement in Vocational Training (Teacher and Non Teacher)



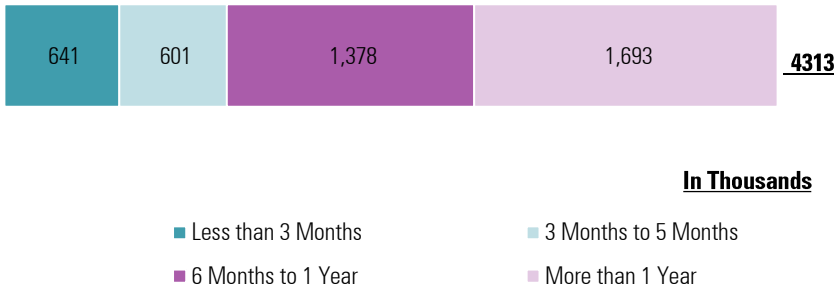
40% of the persons receiving vocational training opt for courses with a duration of more than a year

Formal vocational training refers to training delivered in all registered public and private institutions. Informal vocational training refers to those receiving training via hereditary, on the job or self learning

Assumptions:
As per ITI Norms by DGET the unit/class size per trade in an institute should be 16. There fore, assuming the STR of 1:16, the number of FTTEs have been calculated

Source: Status of School Education and Vocational Training 2009-10 and KPMG in India analysis

Number of Students Receiving Vocational Training (as per Duration of Course) in 2009-10



Number of Full Time Teacher Employees (FTTEs) as per Duration of Course in 2009-10

Job roles

Core / Critical Job Roles

School Education	Higher Education	Vocational Education
Teacher – Class/ Subjects	Professors – Junior/ Experienced/ Visiting	Trainers
	Professors with administrative acumen	Master Trainers
	Research Staff	Mobilizers
	Lab Assistant	Project Managers
		Center/ Operations Managers
		Placement Coordinators

Skill gaps amongst teachers in school education

- There is a sense of prevalent low quality of talent entering teacher training institutions in recent years, and subsequently joining schools.
- This above is due to a severe talent demand- supply mismatch, i.e. lack of interest in joining the teaching profession, combined with a mushrooming demand for teachers
- Some key skill gap areas in teachers include:
  - Quality of Teaching- What and How to teach both is an issue.
  - Gender Sensitivity in classroom
  - Understanding of Adolescence
  - Child Psychology
  - Adaption of technology and blended learning in classroom

Skill gaps amongst teaching staff in higher education

- In technical education, there are problems in getting support staff like lab assistants apart from faculty
- Manpower gap is likely to remain the same or aggravate in next 5 years for faculty since the supply pipeline is long gestation (PhD programs take 4-5 years)
- Faculty needs to get reskilled in newer pedagogical methods that leverage technology
- Broadly the skills required from faculty apart from technical skills (subject knowledge, breadth of knowledge) required for teaching and research, include those of fund raising (through research etc.) and institution building
- Having PhD as a mandatory pre-requisite evoked mixed reactions from institutions – some top institutions feel that this criterion need not be diluted, despite challenges in getting talent. A few others feel that the PhD criterion restricts that talent pool from which one can recruit, especially in a situation where a lot of non-PhD, industry experienced professionals have very good potential to become Professors
- A well defined incentive and rewards scheme is required especially in University level institutions to attract and retain good faculty. This might be missing in a majority of Indian institutions today

Training infrastructure

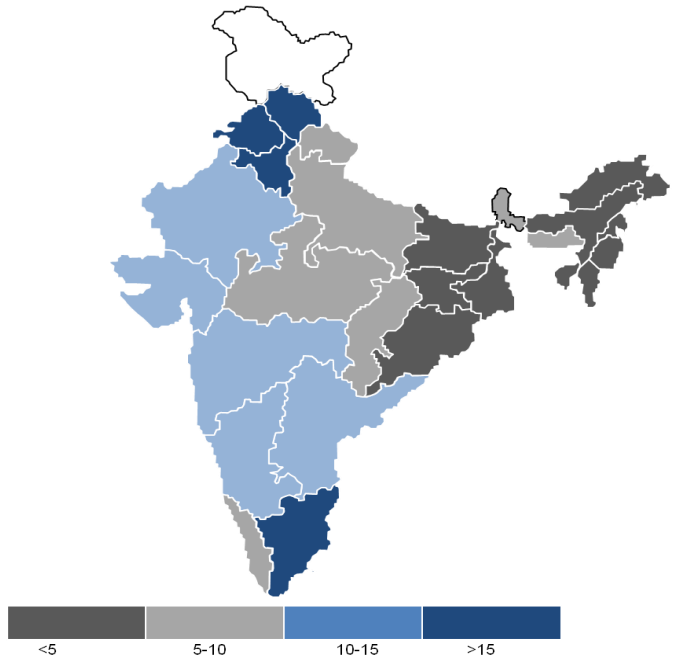
Training Infrastructure

- Addressing the imbalances and the increased demand for quality teachers in the country, the government established the National Council of Teacher Education (NCTE) with the twin strategy to (a) prepare teachers for the school system (pre-service training) and (b) improve the capacity of existing school teachers (in-service training).

- There is a large network of government – owned teacher training institutes (TTIs) which provide in – service training. The NCERT along with its six regional instates of education prepares a host of modules for various teacher training courses and also undertakes specific programs for teacher educators. Similarly, there are State Councils of Educational Research and Training (SCERT) to serve the purpose. Following table gives a list of institutes that offer various programs in teachers' education.

Institute	Programme
Cluster Resource Center	In – service education
Block Resource Center	In – service education
District Institute of Education	D.Ed. (Elementary School)
State Council of Education Research and Training	D.Ed + Pre- School Teacher Education
Private Institutes affiliated to SCERT	D.Ed + Pre- School Teacher Education
Institutes of Advanced Studies in Education	B.Ed, M.Ed, M.Phil and PhD in Education

Seat Intake Capacity (per 10,000 persons) in Teacher Training Institutes



Number of Seats per 10,000 persons for Teacher Education (D.Ed + B.Ed + M.Ed)

- The intake capacity of these institutes offering teacher education and training is 12.95 lakh provided by more than 16000 institutes (including both government and private offering range of programs from certificate courses to PhD in Education).

- The exhibit below gives an overview of the seat capacity across various states that offer teacher's education programs (including Diploma, Bachelors and Masters in Education). Tamil Nadu and Haryana have the largest capacity offering 28.93 and 30.18 seats for teacher education per 10,000 persons. States like Orissa, West Bengal, Meghalaya and Other North East States have a capacity of less than 5 seats in teacher education per 10,000 persons.

Challenges and SWOT analysis

Shortage of manpower (quality and quantity)

- The scale at which schools are growing in rural areas, there is always a gap in supply of teachers. This is due to two reasons. First, teachers in rural areas need to be trained for 2-3 years and then employed as assistants to senior teachers after which they are permanently recruited. This increases the number of years to become a school teacher which might lead to cause the trainees to shift to other types of jobs or they lose interest. Second, good qualified teachers from towns are unwilling to locate to rural areas
- Teaching is no more a lucrative profession- salaries are usually low. Although its largely dominated by female workers, due to different available career options, there is a poor preference amongst the youth
- Kendriya Vidyalas (KV) have almost 20% vacancy in schools which is largely due to not getting right kind of TGTs/PGTs
- The quality gap is faced in terms of mother tongue influence. While the students from rural areas have good intellectual quotient, they speak in English whose accent and pronunciation is influenced by their mother tongue

Inadequate qualification

- School teachers are typically required to be Trained Graduate Teachers (TGTs) or Post Graduate Teachers (PGTs) or B.Ed. Senior teachers must have subject matter expertise through advanced degrees and they may have an M.Ed
- Private schools run by education trusts make it mandatory for school teachers to be qualified with B.Ed. However, most teachers pursue it via correspondence which is not the ideal mode
- CTET results in last 3-4 years is mandatory for KVs and other centrally governed schools
- Quality of teaching, gender sensitivity in classroom, understanding of adolescence, child psychology, adaption to technology and blended learning in classroom is an issue
- CBSE is empanelled with KV to train teachers on subject matter, new trends in teaching, implementation of CCE – each teacher trained every 5 years for a duration of 5-20 days

Infrastructure

- J&K and Maharashtra has more capacity and infrastructure for B.Ed and M.Ed than required and lot of it is illegal/without right affiliation. There is a trend of students from other students enrolling in these states for relatively easier degrees.
- Degree colleges and B. Ed and M. Ed colleges quality across India is very poor and schools don't get right kind of talent.
- There are five or six Regional Education Institutions (REIs) offering B.Ed/M.Ed courses and are considered very good in their quality. They have total capacity of 600 Faculties out of which almost 200 is vacant. They also offer integrated course after 12th standard
- CIE Delhi is a good Teacher Education Institution

Shortage of manpower (quality and quantity)

- Poor quality of teachers especially in Engineering and Medical fields
- The mandate of having a PhD for a teacher greatly reduces the quality pool from which they hire. Also quality of PhD candidates is steadily deteriorating
- Lack of emphasis on soft skills and teaching pedagogy in the education sector
- HE faces an acute shortage particularly on the PhD front
- Many professors specialize in areas that are different to the subject taught by them (eg: Specialization in Nanotechnology but teaching general physics) leading to lesser satisfaction
- Teachers with prior academic experiences are very few and this poses a challenge to institutions who have to provide training at the risk of attrition
- 6th Pay commission salary hikes make it difficult to structure in performance-based schemes which private medical colleges prefer
- Centralising training programs across the state and ensuring standardized delivery
- Staff optimisation results reveal that there is a high number of non-academic staff which results in a few challenges namely- union issues and strikes, high variable expenses, expansion becomes cumbersome, low commitment to skill upgrade, lack of experience in the educational sector

Lack of incentive for teaching

- The commitment to the teaching profession is waning as the top quality talent is usually attracted to corporate jobs which typically are better paymasters
- As a result the quality and commitment of teachers across the sub-sectors and particularly in higher education is decreasing across the years
- Populist and unskilled labour employment schemes prove detrimental to skilling initiatives as people prefer low-wage jobs to skilled ones which might require migration etc.
- Lack of initiative to pursue PhD / career in academics
- Most quality professionals choose to work in the industry with higher packages
- Location can often be a factor affecting supply, particularly for rural/remote locations
- Lack of development initiatives particularly in many private engineering colleges discourages people taking up the teaching profession

SWOT analysis

Strengths	▪ Government initiatives in establishment of national council on teachers education to improvise the quality of teachers in school education ▪ Increased private sector participation in secondary and higher education indicates improved quality of services ▪ India due to its favourable demography has a large pool of graduates who could be trained to becomes teachers
Weaknesses	▪ Limited efforts to improve the quality of teachers offering vocational training ▪ Inadequate infrastructure facilities and standardised curriculum to train teachers in skill development ▪ Teachers who are offered certificates for training for short-term courses by organisations other than the government are often not recognised by education institutions which dissuades candidates from training ▪ Poor monetary benefits and low incentives makes it a least favourite option among professionals ▪ Teachers are often found wanting in soft skills and use little or no use technology in teaching ▪ The B.Ed and M.Ed courses need to be overhauled to make them more relevant and linked to the university system
Opportunities	▪ Private sector participation in vocational training seems to show some progress in the quality of training delivered and the skills imparted to students ▪ With increased enrolment ratio across various segments of education and skill development, there will be an increased demand for good quality teachers ▪ With acts like Right to Education there is conscious effort to maintain students teacher ratio the demand for teachers is more than ever ▪ The demographic dividend that India has will mean there will be more number of students accessing schools, college s and universities thus driving the demand for teachers
Threats	▪ Competition from private schools and colleges causes inequality and lack of access to all students in the quality of education and vocational training ▪ Poor quality of teachers lead to increased dependency on online sources of learning for the students making the classroom teaching redundant ▪ Due to lack of incentives and inadequate monetary benefits students , researchers, engineers often join the industry rather than teaching

Recommendations for stakeholders

Low interest in undertaking teaching profession needs to be addressed through appropriate positioning and incentives

- There is little or no aspiration among graduates to join the teaching profession due to lack of prestige and competitive monetary benefits
- There is a sense of prevalent low quality of talent entering teacher training institutions in recent years, and subsequently joining schools
- The above is due to a severe talent demand- supply mismatch, i.e. lack of interest in joining the teaching profession, combined with a mushrooming demand for teachers
- Some key skill gap areas in teachers include:
- Quality of teaching- what and how to teach both is an issue.
- Gender sensitivity in classroom
- Understanding of adolescence
- Child psychology
- Adaption to technology and blended learning in classroom
- There is also faculty shortage at the higher education level with qualified graduates joining the industry rather educational institutions

Recommendation 1 : Provide long term benefits and recognition to teachers and improve overall work benefits

- Launch a national level marketing campaign to restore the pride of the teaching profession by highlighting the job satisfaction, the work benefits including paid vacation, work timings and career path
- Revamp the teacher training (pre service and in service) to include latest pedagogical methodologies and quality assurance techniques
- Rotation of professors for HOD and other senior positions ensuring professors have incentive to develop juniors
- Highly structured incentive schemes which take technical competency, teaching assessment, student perspectives, soft skill competencies into consideration and based on the rating monetary perks are provided
- Division of institutions in tiers based on prestige and opportunity for teachers and developing bands within the tiers to provide career progression incentives
- Based on assessments teachers are provided with a three-year improvement plan where they can work on their areas of development and leverage their strengths
- Launch a educational research programs in higher education institutions (like PhD in Education in Harvard) to consistently evolve teaching techniques and develop the training curricula for teacher education. Revamping existing B.Ed and M.Ed curriculum is the necessary to make teaching methodologies relevant

Teachers training, hiring at the school level needs to be revamped

- Quality of entrants in teaching courses are very poor. To teach elementary level only higher secondary qualification is needed and an under graduate degree for teaching secondary level. This affects the quality of teaching and learning in the classrooms
- The quality of candidates who take the TET which was instituted in 2011 to screen the pre -service teachers is poor
- Content of B.Ed and D.Ed are not linked to practical realities of classroom teaching, subject matter knowledge and various knowledge domains such as psychology, sociology and philosophy of education are put together in an incoherent manner
- There is a paucity of teacher educators. Number of states that provide M.Ed courses very low. M.Ed programme caters to only secondary education and overlooks elementary level
- To fulfill the mandate of teacher-student ratio as prescribed by RTE Act, a lot of state government provide teacher training courses in distance mode which lead to poor quality training.
- NCTE norms require that teacher training courses have separate campus within university thus isolating it from
- While in-service training programmes are there under DPEP, SSA and the teacher education scheme, a comprehensive framework for in-service training is missing

Recommendation 2: Curriculum development, training and assessment of teachers in needed to ensure quality

- Stringent screening of candidates who take the TET will ensure that only the best candidates get through
- A more comprehensive and coherent curriculum that encompass the latest development and interdisciplinarity is needed
- M.Ed programe should be a two-year programme with sufficient provisions to branch out into curriculum studies, pedagogic studies, policy, finance and foundational studies
- Quality of teacher assessment needs to improve. A pre-service teacher education programme to test the aptitude of the candidates on qualitative parameters as well such as attitude towards children, values, disposition, habits and communication skills is important
- Training programmes for in-service teachers need to be undertaken at regular intervals with updated curriculum, adequate infrastructure and modernising the training process applying technology to make it more interactive
- Need to have a national level academic body for periodic assessment of teacher education programmes both pre and in service, continuos update of curriculum with changing needs and development of faculty for teacher educators

Long gestation period for PhDs and low supply of PhD programs is increasing the severity of the talent shortage in faculty positions in higher education institutions

- Manpower gap is likely to remain the same or aggravate in next 5 years for faculty since the supply pipeline is long gestation (PhD programs take 4-5 years)
- Faculty needs to get reskilled in newer pedagogical methods that leverage technology
- Broadly the skills required from faculty apart from technical skills (subject knowledge, breadth of knowledge) required for teaching and research, include those of fund raising (through research etc.) and institution building
- Having PhD as a mandatory pre-requisite evoked mixed reactions from institutions – some top institutions feel that this criterion need not be diluted, despite challenges in getting talent. A few others feel that the PhD criterion restricts that talent pool from which one can recruit, especially in a situation where a lot of non-PhD, industry experienced professionals have very good potential to become Professors

Recommendation 3: Consider policy level changes in providing for faculty positions drawn from non PhD backgrounds

- UGC could look into allowing a small percentage of non PhD faculty who could rise to Professor and administrative positions in universities and colleges. Such faculty should be selected from a pool of exceptional industry experienced professionals with 15 to 20 years of work experience and whose teaching and research capabilities can be tested and certified
- A national level certification program could be developed for assessing pre-service and re-training of faculty from both PhD and non PhD backgrounds

Lack of incentives for trainers to join the vocational education space

- There is a perception that vocational education and skill development are for people who have failed to in the mainstream
- The poor perception percolates to the people who work as trainers in the sector. Working as a trainer is not a very aspirational job, and features lower on aspiration
- There is a severe quality gap with trainers as they are not aware how to deal with the attitude, personality, personal problems and be a good mentor to the students who may not be from the same socio-economic status
- Finding trainers to work in rural areas is more difficult
- Duration of trainer programme by DGET is only one year

Recommendation 4: Improve the overall perception of vocational education and offer incentives for trainers

- The government/ NSDC must consider sectoral/ regional/ national level 'Acharya' awards for recognising and incentivising trainers
- Developing training institutes with industry infrastructure that will ease the investment needed from educational institutions particularly for technical education and VE
- Providing mandatory certification and re-assessments for teachers in all sub sectors
- Structured programs for teacher training particularly in the VE sector that requires industry exposure
- Norms that take softer skills into consideration for certifying teachers. Soft skill training is essential for teachers and would vastly improve the productivity of the sector
- The duration of courses to train the trainers by institutions like DGET need to be increased given the quality of candidates who take it up
- Technical training requires practical industry exposure . REEMAP has tied up with industrial organizations to provide teacher training through practical exposure. Increasingly, governments must realize that going for the typical L1 tender in this space will not get quality. In this context, schemes which allow cost structure based contracts are a good strategy to delivery quality training

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
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Transforming the skill landscape

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