# Workshop on Science, Technology and Innovation for SDGs

**DR. MANPREET SINGH MANNA**
FORMER DIRECTOR, ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
MINISTRY OF HUMAN RESOURCE DEVELOPMENT, GOVT. OF INDIA
FACULTY, SLIET UNIVERSITY, PUNJAB, INDIA

@drmanpreetsinghmanna    +91-98718-21217    mannasliet@gmail.com    Dr. Manpreet Manna

# STI for ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all-SDG 4

1. **Present Scenario of India**

a) Primary and School Education          b) Higher Education

- **Challenges ahead**

- **Initiatives and Achievements**

# Primary and School Education Scenario

- India is a vast country with over 1.3 billion people. Close to 200 million children study in primary and secondary schools. The majority of these children are in rural areas, spread over 600,000 villages.

Challenges Like

1. Mindset and attitude towards the teaching-learning process

2. Issues with the curriculum

3. Building teachers' capacity and accountability

4. Blending in technology and infrastructure as catalysts for higher le

5. Personalised learning and remediation

6. Systemic evolution

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

# As per one of NGO survey Report 2017

- As of 2011, the enrollment rate for pre-primary schools is 58 per cent and 93 per cent for primary schools. However, as per the studies, among rural children of age 10, half could not read at a basic level, despite the high overall enrollment rate for primary education.

- Some of the reasons cited for the poor quality of education in schools include the absence of around 25 per cent of teachers every day. Also, as per some online reports, the pupil to teacher ratio within the public school system for primary education is 35: 1.

- A study of 188 government-run primary schools found that 59 per cent of the schools had no drinking water and 89 percent had no toilets.

- The District Information system for education (DISE) data shows that only 6 out 10 schools in the country have access to electricity. Bihar is the worst offender with only 10 % of its schools having access to electricity. This a major issue for students to bear such a temperature during hot summers.

- The quality of teachers is also important for the learning outcomes but the DISE data shows that only 69 % of all school teachers in the country have a graduate degree or more.

# Some Recent Initiatives and Achievements

Today there is a school within 1 Km distance of most children and almost every child is in school

(Enrollment rates have gone up to 93%-95% in most parts of the country).

**The government's flagship program Sarva Shiksha Abhiyan (SSA) has done this miracle. In 10 years, SSA has achieved following:**

- Out of School children number has been brought down significantly (8 million in 2009, 3 million in 2012).

- Big boost to additional schools -195,000 Primary and more than 100,000 Upper Primary schools sanctioned.

- 2 million additional teacher posts.

- 1.8 million additional classrooms approved.

- 230,000 drinking water projects approved.

- Girls' admission improved dramatically. Gender parity is achieved.

- The scheme supports 200 million children in 1.4 million schools in the country.

# Remedial Approach

- Effective lesson plans for unlocking learning blocks, creating learning triggers and authentic resources, and tightly aligned assessments

- Pedagogical techniques blended with domain competency, collaborative teaching, self/peer learning, flipped classrooms and blended learning

- Transdisciplinary inquiry tools and abilities for building fundamental concepts

- Creating interconnected learning eco-system in school by integrating curricular and co-curricular, designing integrated projects

- Eco-friendly infrastructure and well equip with basic enmities schools to be in every village of country.

- The teacher recruitment process with central and state level pool system with regular teacher's refresher, orientation, Induction programmes to enhance their, ICT skills and digital platform teaching & Learning abilities.

# ENROLLMENT STATUS IN HIGHER EDUCATION

| General Courses (Mn) | | Professional Courses (Mn) | |
|---|---|---|---|
| Arts | 9.74 | Engineering | 4.45 |
| Commerce | 4.45 | IT/CS | 1.02 |
| Science | 5.56 | Management | 1.15 |
| Education | 2.25 | Medical Sciences | 1.12 |
| Social Science | 1.88 | Law | 0.38 |
| | | Others | 12.38 |

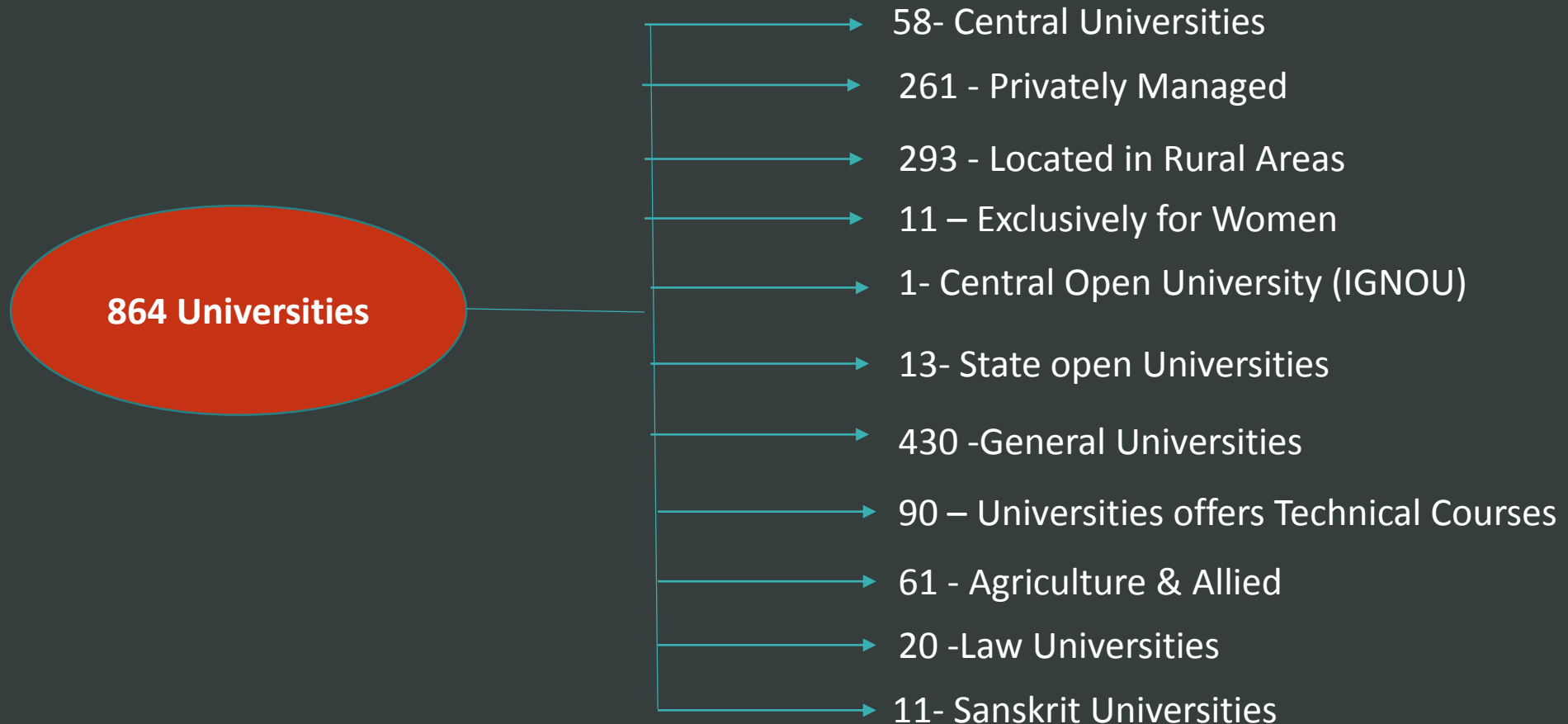**Enrolment in Professional courses grew at 20% CAGR**

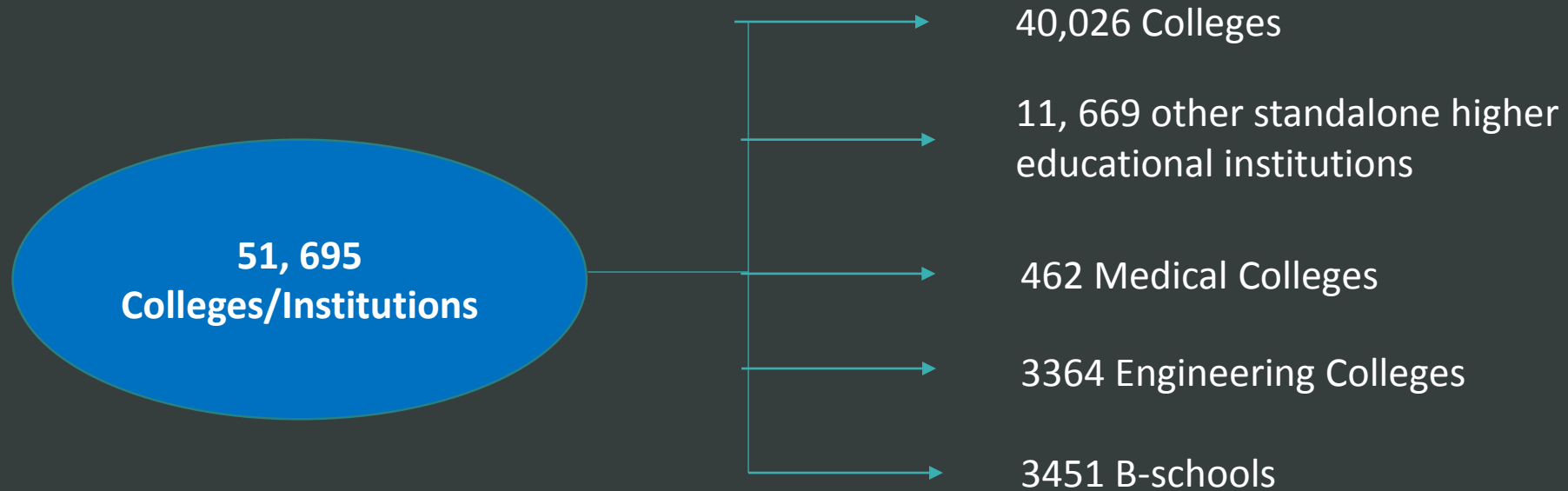**General courses account for 2/3$^{rd}$ of total Enrolment**

**Private Institutions account for 64% Institutions and 60% of enrolment**

**The current Gross enrollment ratio of. India 25.2% in comparison to China's 43% and US 83%.**

**VISION INDIA- 2030 to attain 50% GER**

# Indian Higher Education Scenario

**864 Universities**

- 58- Central Universities
- 261 - Privately Managed
- 293 - Located in Rural Areas
- 11 – Exclusively for Women
- 1- Central Open University (IGNOU)
- 13- State open Universities
- 430 -General Universities
- 90 – Universities offers Technical Courses
- 61 - Agriculture & Allied
- 20 -Law Universities
- 11- Sanskrit Universities

# Progress in Last few Years

- India is among top 5 countries globally in cited research output, its research capabilities boosted by annual R&D spends amounting to over US$140 billion

- India is in the fourth cycle of its research excellence framework, with at least a 100 of Indian universities competing with the global best

- 23 Indian universities are among the global top 200, going from none two decades ago.

- In the last 20 years alone, 6 Indian intellectuals have been awarded the Nobel Prize across categories

- India is a regional hub for higher education, attracting global learners from all over the world

- The country has augmented its GER to 50% while also reducing disparity in GER across states to 5 percentage points

- The Indian higher education system is needs-blind, with all eligible students receiving financial aid. Two-thirds of all government spending towards higher education is spent on individuals, including faculty and students

- India's massive open online courses, started by several elite research universities, collectively enrol 60% of the world's entire student population

- Indian higher education institutions are governed by the highest standards of ethics and accountability, with every single one of them being peer-reviewed and accredited

The Key factors that have contributed to this growth and can help envision the 2030 Goals are:

- ❖ **Expansion of a differentiated university system with a three-tiered formalized structure**

- ❖ **Transition to a learner-centered paradigm of education**

- ❖ **Intensive use of technology**

- ❖ **Reforms in governance**

# Initiatives Taken for Innovation and startups

- **Smart India Hackathon (World's largest coding competition for 36 hours)**

- **Atal Incubation centers**

- **AICTE-Startup Policy for funding UG students**

- **SAGGY**

- **Research Parks**

# Initiatives Taken for Quality Education

**Accreditation and Ranking**

- NBA (National Board of Accreditation)
- NIRF (National Institution Ranking Framework)
- NAAC (National Accreditation and Assessment Council)
- HEFA (Higher Education Funding Agency)
- National Model Curriculum for all professional courses

**Digital Initiatives**

- SWAYAM- Study webs of Active Learning for Young Aspiring Minds (World's largest MOOCs Platform) (swayam.gov.in)
- SWAYAMPRABHA- 33 Free to Air E- content delivery TV Channels (swayamprabha.gov.in)
- National Digital Library- with more then 20Mn Books, articles etc. in more then 200 languages and 25% books are available in audio mode too. (ndl.gov.in)
- National Academic Depository – All the academic credentials of the Indian graduates are digitally stored in National depository with easy accessible mode for employer and stakeholder within no time.

**Fellowships & Scholarships**

- National Doctorate Fellowship- Young Doctorate candidates in Engineering, Management, Pharmacy etc. gets Fellowships.
- GATE/GPAT Scholarships- all PG students of Engineering and pharmacy receives Government Scholarships

# Startup India Resources

Leverage the Benefits, Relaxations, Learning Program and more to gear up for the exciting startup journey.

## Notifications

Details of benefits under Startup India Action Plan and official notifications

## Self Certification

Click here to self-certify compliance in respect of 6 Labour Laws

## State Startup Policies

Know more about the initiatives and benefits offered by states to startups

## L & D program by Upgrad

Free online Entrepreneurship program by Startup India, a GOI initiative

## Tax Incentives

Meeting Notice and Decisions of Inter Ministerial Board

## Startup India Kit

Starter Kit for budding entrepreneurs, visionaries and dreamers!

## List of Facilitators for Patents

Legal Support and Fast-tracking Patent Examination at Lower Costs

## Initiatives

Know more about various initiatives organised by Startup India

## List of Facilitators for Trademarks

Legal Support and Fast-tracking Trademark Examination at Lower

# Indian Startup Ecosystem



**3rd**
largest startup ecosystem in the World

**270%**
growth in 6 years

**26,000+**
startups

**USD 90Bn**
Value Created

## 10 THINGS TO KNOW ABOUT INDIAN START-UPS

**28**
The average age of start-up founders

**$5 billion**
Estimated total funding for start-ups in 2015

**110**
Number of incubators and accelerators in India

**4200-4400**
Number of start-ups in India (third highest in world after US and UK)

**80,000-85,000**
Number of people employed in start-ups

**3-4**
Number of start-ups born every day

**$2.5-2.7 million**
Average valuation of start-ups

**13-15%**
proportion of start-ups in e-commerce, the highest in any segment

**65**
Number of M&A deals and exits involving start-ups seen in the first three quarters of 2015

**292**
Number of active angel investors in 2015-10-13

Source: Nasscom India and Zinnov Consulting's Start-up India report

Ministry of Skill Development and Entrepreneurship was setup in 2014 : A great Initiative of Government for SKILLING INDIA

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP

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

The Ministry of Skill Development and Entrepreneurship is a Ministry of Government of India set up on 9 November 2014 to coordinate all skill development efforts across the country. Industrial training, apprenticeship and other skill development responsibilities were transferred from the Ministry of Labour and Employment to this newly-made Ministry It aims to remove the disconnect between demand and supply of skilled manpower, to build the new skills and innovative thinking not only for existing jobs but also for jobs that are to be created.

# NSQF- National Skill Qualification Framework

It is a competency-based framework that organizes all qualifications according to a series of levels of **knowledge**, **skills** and **aptitude**. These levels, graded from one to ten, are defined in terms of learning outcomes which the learner must possess regardless of whether they are obtained through formal, non-formal or informal learning.

Specific outcomes expected from implementation of NSQF are:

➢ Mobility between vocational and general education by alignment of degrees with NSQF
➢ Recognition of Prior Learning (RPL), allowing transition from non-formal to organised job market
➢ Standardised, consistent, nationally acceptable outcomes of training across the country through a national quality assurance framework
➢ Global mobility of skilled workforce from India, through international equivalence of NSQF
➢ Mapping of progression pathways within sectors and cross-sectorally
➢ Approval of NOS/QPs as national standards for skill training

# Pradhan Mantri Kaushal Vikas Yojana (Prime Minister Skill Development Scheme)



- PMKVY Training Centres are to benefit candidates of Indian nationality who are either school/college dropouts or unemployed. Apart from providing training according to the National Skills Qualification Framework (NSQF), TCs shall also impart training in Soft Skills, Entrepreneurship, Financial and Digital Literacy. Upon successful completion of their assessment, candidates shall be provided placement assistance by Training Partners (TPs). Under PMKVY, **the entire training and assessment fees are paid by the Government.**

- PMKVY envisages the creation of a platform that will facilitate trainings in special areas and/or premises of Government bodies, Corporates or Industry bodies, and trainings in special job roles not defined under the available Qualification Packs (QPs)/National Occupational Standards (NOSs).

| | |
|---|---|
| **Life Skills** | To Save Energy, Environment, water and Mankind |
| **Industrial skills** | To Develop Nation and world with zero effect and Zero Defect |
| **Ancient Indian Skills** | To save Tradition, Culture, Language and Healthy Life style with Green-Agriculture and Yoga |
| **Self Employability Skills** | To make startups and entrepreneurs for creating jobs than seeking jobs |

# THANK YOU

Any Questions
Please

@drmanpreetsinghmanna    WhatsApp    +91-98718-21217    mannasliet@gmail.com    Dr. Manpreet Manna