

# India's Education: 25 Years On, The Road to 2035

2000 - 2025



A landmark analysis of India's school education, higher education, skilling ecosystem, and EdTech revolution combining policy research, national survey data, and Voices of Transformation from India's leading changemakers.

5  
Sections  
of analysis

100+  
Sources  
authenticated  
data

25  
Years  
2000-2025



# Foreword

## CHANDRAKANT PATIL

Minister of Higher & Technical Education, Government of Maharashtra



Education is the foundation upon which the future of any society is built. For a nation as large, diverse, and aspirational as India, and for a progressive state like Maharashtra, the responsibility of building an inclusive, future-ready education system carries immense significance.

Maharashtra has long been at the forefront of India's educational and social reform movements. From the pioneering work of Mahatma Jyotiba Phule and Savitribai Phule to the growth of some of the country's finest universities, research institutions, and centres of innovation, the state has consistently demonstrated a deep commitment to the transformative power of learning.

Today, however, the meaning of education itself is evolving rapidly.

The world our students are preparing to enter, is shaped by technological disruption,

artificial intelligence, automation, climate challenges, and a global economy that rewards adaptability and innovation. In such an environment, education can no longer be limited to the transfer of knowledge alone. It must prepare learners to think critically, solve problems creatively, collaborate effectively, and continuously adapt to change. This shift demands a new approach from institutions, policymakers, educators, and industry alike.

The National Education Policy 2020 has laid an important roadmap for this transformation by encouraging multidisciplinary learning, flexibility, research, digital integration, and stronger alignment between education and employability. Maharashtra, with its strong academic ecosystem and industrial leadership, is uniquely positioned to play a defining role in translating this vision into meaningful outcomes.

At the same time, we must ensure that the benefits of educational progress reach every learner equally. Access, equity, affordability, teacher development, digital infrastructure, regional inclusion, and skill integration remain central to the future of educational reform. The true measure of progress lies not only in excellence at the top, but in expanding opportunity across every section of society.

This white paper by ET Education is both timely and significant. It brings together data, insights, and perspectives that help us understand the opportunities and challenges shaping India's educational future. More importantly, it encourages thoughtful dialogue on how governments, institutions, educators, and industry stakeholders can work together to create systems that are resilient, innovative, and student centric.

India's demographic strength is one of its greatest advantages, but demographic potential becomes meaningful only when supported by quality education and meaningful opportunities.

The young minds in our classrooms today will shape the economic, technological, and social trajectory of tomorrow's India.

Our collective responsibility is to ensure they are prepared not only to succeed in a changing world, but also to lead it with confidence, knowledge, and purpose.

Education is one of the most powerful forces shaping the future of any nation. In today's rapidly changing world, schools are expected not only to impart academic knowledge but also to nurture values, creativity, adaptability, and responsible citizenship among young learners.

The pace of transformation across technology, industry, and society has made this responsibility even more significant. Artificial intelligence, digital learning ecosystems, and evolving career pathways are redefining the skills students will require in the future. Education systems must therefore evolve continuously to prepare learners not just for examinations, but for life itself.

India's educational landscape is currently witnessing an important phase of reform and reflection. The vision of the National Education Policy 2020 has encouraged institutions to adopt more holistic, multidisciplinary, and learner-centric approaches that place equal emphasis on knowledge, skills, ethics, and emotional well-being.

In this evolving environment, schools play a foundational role in shaping the intellectual and moral character of future generations. The Council for the Indian School Certificate Examinations (CISCE) has consistently

# Foreword

## DR JOSEPH EMMANUEL

Chief Executive and Secretary Council for the Indian School Certificate Examinations



focused on promoting academic excellence alongside the broader development of students. CISCE schools across the country have contributed significantly toward fostering inquiry-based learning, strong language proficiency, analytical thinking, and a culture of curiosity and innovation.

At the same time, educational institutions must remain sensitive to the diverse needs and aspirations of learners. Inclusivity, accessibility, teacher development, mental well-being, and meaningful integration of technology are becoming central to the future of quality education. Preparing students for a complex and interconnected world requires collaboration between educators, parents, institutions, policymakers, and society at large.

This white paper by ETEducation is a timely contribution to the ongoing dialogue

around the future of education in India. It brings together important perspectives on the opportunities, challenges, and transformations shaping the sector while encouraging constructive engagement among all stakeholders. Education is ultimately about unlocking human potential. The true success of any educational system lies not only in academic outcomes, but in its ability to nurture confident, compassionate, ethical, and capable individuals who can contribute meaningfully to society.

India possesses immense intellectual and demographic strength. With thoughtful reforms, strong institutions, and a shared commitment to excellence, we have the opportunity to shape an education system that empowers every learner to thrive in the decades ahead.



# How to Read This Report

This white paper is structured across eight sections. Each of the five core sections opens with a forward-looking outlook before tracing the 25-year evidence base. The past is context. The future is the agenda.

## Foreword + Executive Summary

# 4-17

India at inflection point, data dashboard, report map

## School Education: The Access Revolution

# 18-31

Enrolment story, learning crisis, NIPUN, 3 changemaker columns

## Higher Education: Expansion & Quality

# 32-45

GER growth, employability gap, NEP 2020, 3 changemaker columns

## Skilling & the AI Inflection Point

# 46-57

PMKVY journey, employability paradox, AI disruption, 2 changemaker columns

## The Rise of EdTech & Digital Learning

# 58-69

Market evolution, BYJU'S vs PW, DIKSHA, 2 changemaker columns

## The Future of Education: Pathways to 2035

# 70-83

AI, internationalisation, ABC, lifelong learning, 2 changemaker columns

## Survey Insights

# 84-88

National survey findings — data, charts, insight callouts

## 10 Big Shifts Shaping Education by 2035

# 89-90

Visual synthesis: white paper + survey + expert inputs

## Closing & Call to Action

# 91-97

2035 vision scorecard, policy agenda, sector recommendations

# A Note from the Project Lead

This report has its origins in a conversation in February this year, when we started thinking about what ETEducation's Annual Education Summit should leave behind. Our summits bring together the country's top education voices for two days. We wanted something that lasted longer than that, a knowledge paper that the sector could actually use.

What followed was three months I did not quite anticipate.

The first challenge was the data. Twenty-five years of education statistics sounds like it should be well-documented. It is not. Numbers from 2000 sit in archived plan commission reports, old DISE records, and sources that contradict each other if you look closely enough. Verifying a single baseline figure sometimes meant going back three or four sources deep. This part of the work took longer than almost anything else, and I think it shows in the final product.

The scope also shifted along the way, and I think for the better. We started with a clear frame: document how India's education sector has transformed over 25 years, then add a forward-looking chapter. But in one of our editorial board meetings, the question came up, who really needs another retrospective? The transformation is real and worth documenting, but the more urgent conversation is about where we go from here. So we kept the 25-year evidence base as the foundation and made the future the main argument. That decision changed the entire weight of the report.

The survey was the part I was most uncertain about going in. Getting senior education practitioners to stop and answer 20 questions honestly, across 15 cities, is harder than it sounds. What came back surprised me. Not because the findings were shocking, but because of how consistent they were. Ask people about the biggest barrier to employability and 69% say the same

thing. Ask them what technology will define education's future and 71% give you the same answer. The sector knows what the problems are. It knows what the solutions look like. That consensus, sitting alongside the one in five who think nothing will really change by 2035, is the most honest picture of Indian education I have seen in one place.

I am grateful to the changemakers who gave their time and thinking generously, and to everyone at ETEducation who believed this was worth doing properly.



**Abhay Anand**  
Associate Editor  
ETEEducation

## Editor's *note*

**Yasmin Taj**  
Editor — ETEducation

For decades, the story of Indian education was defined by a singular national mission: access at scale. Build more schools. Open more universities. Expand enrolment. Bring millions into the formal education system for the first time. It was an era shaped by infrastructure, inclusion, policy expansion, and demographic urgency — and by almost every measurable indicator, India achieved what once appeared impossible.

In just 25 years, the country built one of the world's largest education ecosystems. School enrolment crossed 98 per cent. Higher education participation nearly tripled. Digital learning reached hundreds of millions. A nation once battling basic access deficits emerged as a global hub for technology talent, startups, and educational innovation.

### **But scale is no longer the defining challenge of Indian education.**

The next decade will ask a far more difficult question: can India build an education system capable of preparing its people for a world being fundamentally rewritten by artificial intelligence, automation, climate disruption, demographic shifts, and the rapid collapse of traditional career pathways?

### **Because the future arriving before us is unlike anything education systems were originally designed for.**

For over a century, formal education operated on relatively stable assumptions: knowledge was scarce, expertise was institutional, careers were linear, and degrees offered long-term economic security. Those assumptions are now being disrupted simultaneously. Artificial intelligence is redefining the

value of information itself. Employers are prioritising adaptability over memorisation. Entire job categories are being automated even as entirely new industries emerge. Skills are expiring faster than curricula can evolve. The idea that education ends in one's early twenties is rapidly becoming obsolete.

By 2035, today's learners may work across multiple careers, industries, and identities during a single lifetime. The most valuable capabilities will no longer be routine technical proficiency alone, but creativity, critical thinking, ethical reasoning, interdisciplinary problem-solving, emotional intelligence, and the ability to continuously learn, unlearn, and reinvent oneself.

### **This transformation places India at a historic crossroads.**

No country has more to gain from the AI era — or more to lose from failing to

prepare for it. India possesses the world's largest youth population, an expanding digital economy, rising innovation capacity, and one of the fastest-growing technology ecosystems globally. But demographic advantage is not destiny. A generation entering the workforce without future-ready skills risks turning the demographic dividend into a structural economic challenge.

**That tension defines this white paper.**

Across these pages lies the story of extraordinary progress — and unfinished transformation. India succeeded in getting children into schools, students into colleges, and millions into digital learning ecosystems. Yet learning outcomes remain uneven. Graduate employability gaps persist at scale. Vocational systems continue to struggle with industry alignment. The digital divide still shapes educational opportunity. And while AI promises to democratise access to knowledge, it also threatens to widen inequality between those equipped to adapt and those left behind by technological acceleration.

And yet, this report is not pessimistic. It is urgent.

Because India today possesses something it did not possess twenty-five years ago: the infrastructure, policy momentum, technological capability, entrepreneurial energy, and institutional ambition to fundamentally reimagine education itself.

The National Education Policy 2020, the rise of hybrid learning models, the expansion of skilling ecosystems, the emergence of AI-enabled learning platforms, and the growing convergence between academia, industry, and innovation all signal that the next phase of Indian education may not simply be evolutionary — it may be transformational.

**Because the next chapter of India's education story will not be written by expansion alone.**

It will be written on whether India can transform scale into capability, access into opportunity, credentials into competence, and learning into a lifelong engine of national progress and human potential.

**India stands at the edge of the most consequential educational transition in its modern history.**

The question is no longer whether India can educate at scale. The question is whether India can build an education system capable of preparing humanity for a world that does not yet fully exist.

# Introduction

India's education story is one of the most consequential transformations of the 21st century — and one of the least fully told. Over the past 25 years, a system that served a fraction of its population has been extended, restructured, and in some dimensions fundamentally reimaged. The scale of what has been achieved is remarkable. So is the distance that remains.

This white paper is an attempt to put both sides of that story in one place.

## WHY 2000 TO 2035

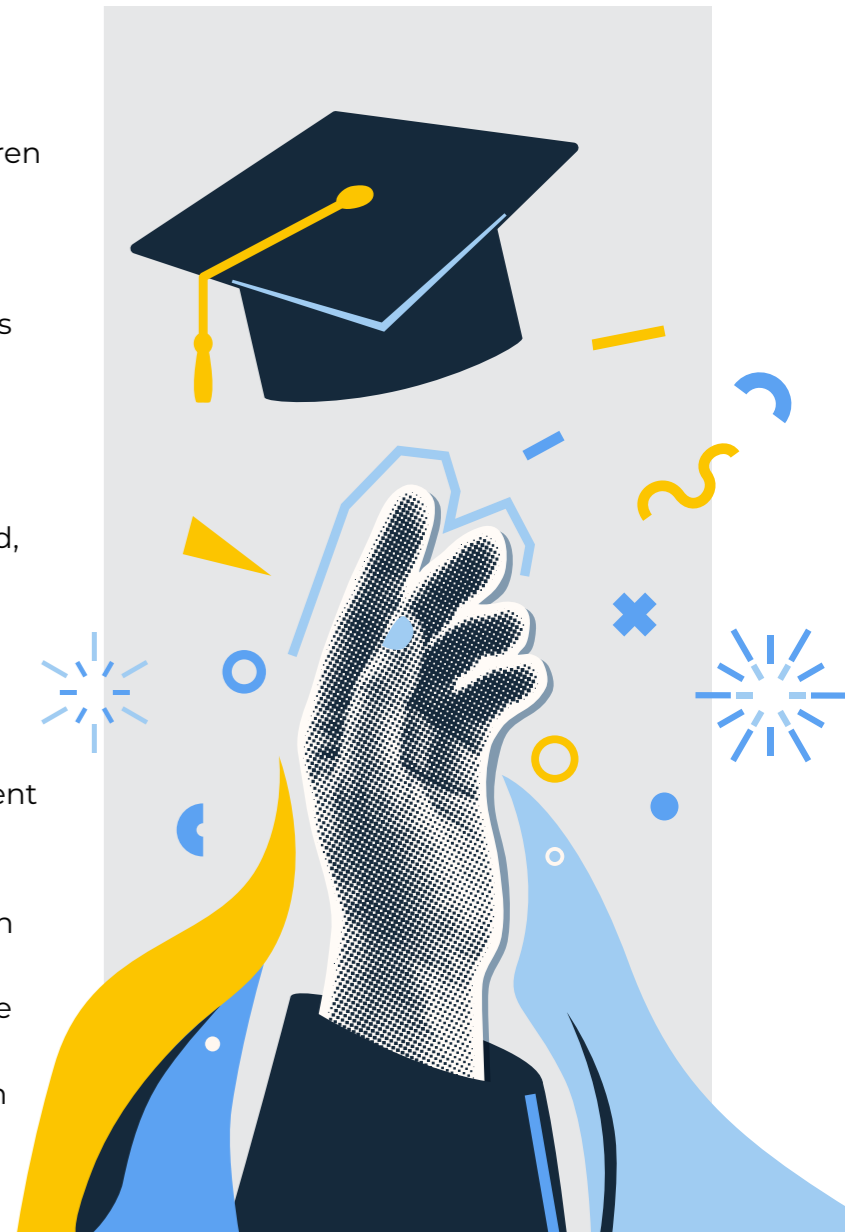
### A Quarter-Century of Evidence, A Decade of Decisions

The year 2000 is a meaningful starting point. India was at the early stages of a demographic surge that would eventually make it the world's most populous nation. The Sarva Shiksha Abhiyan had just been launched. Higher education was still largely elite and largely government-run. Vocational training was marginal. EdTech did not

exist as a category.

By 2025, the numbers had changed at every level. School enrolment for children aged 6 to 14 crossed 98 per cent. The higher education Gross Enrolment Ratio rose from around 10 per cent to 28.4 per cent. India became the world's third-largest startup ecosystem, with EdTech emerging as one of its most visible sectors. The National Education Policy 2020 set out an architecture for the decade ahead that, if implemented, would represent the most substantial structural reform since Independence.

The year 2035 matters for a different reason. It is the horizon that NEP 2020 itself sets — 50 per cent Gross Enrolment Ratio in higher education, universal foundational learning, full vocational integration. It is also the point by which the decisions India makes in the next five years will have worked through the system. A child entering Grade 1 today will graduate from secondary school in



2035. An engineering student enrolling this year will be mid-career. The choices made now — in curriculum, in financing, in institutional design, in how seriously AI disruption is taken — will determine what that cohort is capable of.

### WHAT THIS PAPER COVERS Five Lenses on One System

The white paper examines India's education ecosystem across five interconnected domains: school education, higher education, skilling and vocational training, educational technology, and the emerging frontier defined by artificial intelligence and research. Each section is structured to do two things — document what has changed over 25 years using authenticated data, and make the case for what must change over the next ten.

Woven through the data is a layer that no dataset can supply: the judgment of practitioners. Eleven of India's most experienced education leaders — former regulators, institution builders, researchers, and entrepreneurs — contributed original columns for this report. Their writing appears in the Voices of Transformation sections of

each chapter. A structured survey of over 200 senior education practitioners, conducted across 15 cities, provides a further layer of on-the-ground perspective.

### THE CORE ARGUMENT

**From the Access Decade to the Quality Decade**

**India solved scale. The next challenge is substance.**

If the 2000s and 2010s were the access decade — the period in which India got children into schools, students into colleges, and workers into training programmes — the 2020s and 2030s must be the quality decade. The enrolment revolution is largely complete. The learning revolution has barely begun.

The gap between the two is visible in every domain this report examines. Children are in school but 44.8 per cent of government school Class 5 students cannot read a Class 2 text. Graduates are earning degrees but 45 per cent are not considered employer-ready. Workers are receiving skill training but placement rates across flagship schemes remain well below what the system was

designed to achieve. EdTech companies have reached 182 million DIKSHA enrolments but 38 per cent of rural households still lack a smartphone.

India's education system has successfully built scale. The next challenge is to build substance at that scale. This white paper examines where the gaps are largest, where the levers are most accessible, and where the decisions made in the next five years will matter most for the decade that follows.

*This report covers the period 2000 to 2025 as its primary evidence window, with a forward-looking analysis extending to 2035. It focuses on formal education and affiliated skilling systems at the national level. State-level variation is referenced where the data is significant; a full state-by-state analysis is beyond the scope of this publication. Data citations and methodology notes appear at the end of each section.*

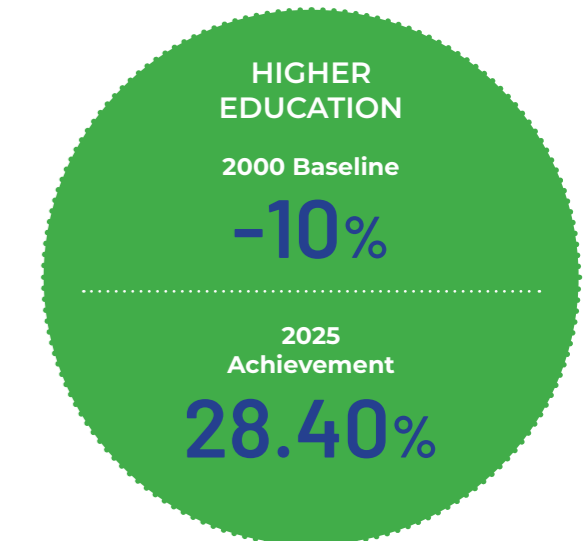
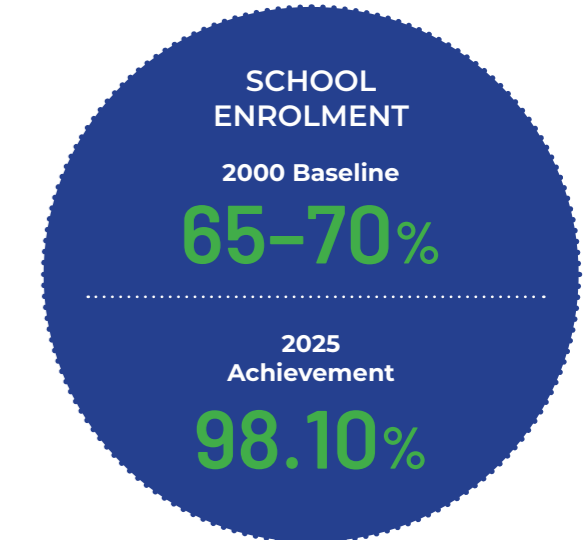


# Executive Summary

## India at an Inflection Point

In 25 years, India transformed one of the world's most under-resourced education systems into one of its largest. The numbers below tell both sides of that story — the extraordinary achievement, and the unfinished work.

Indicator	2000 Baseline	2025 Achievement	Gap / Challenge
School Enrolment (6–14 age)	~65–70%	98.10%	Govt school Class 5 reading at grade level: 44.8% (2024 ASER; down from 56.2% in 2008)
Gender Parity Index (Primary)	0.84	1.01	Secondary dropout: 68 lakh/yr
Higher Education GER	~10%	28.40%	Target: 50% by 2035
Universities	256	1,200+	Wheebox ISR 2026: 54.81% employer-ready
HE Total Enrolment	~1 crore	4.33 crore	State GER: Bihar 16% vs Chandigarh 64.8%
Vocational Training Rate	~2%	5.90%	WEF: 85M jobs disrupted by 2030 (not eliminated — 97M new roles also projected)
EdTech Market	<₹500 Cr	US\$7.5B	BYJU'S: US\$22B peak → insolvency
DIKSHA / Digital Learning	0	182.3M enrolments	38% rural households: no smartphone
Global Innovation Index	N/A (unranked)	39th	R&D spend: 0.7% of GDP (vs 2–3% global)
Education Budget (DoSE&L)	~₹10,000 Cr	~₹78,572 Cr	6% of GDP target: still unmet since 1966



THE  
**25** Years  
JOURNEY:  
Key Numbers

SCHOOL EDUCATION



**SCHOOLS**  
**14.7 LAKH**

World's largest by count



**ENROLMENT (6-14)**  
**98%+**

From ~65% in 2000



**GENDER PARITY**  
**1.01 GPI**

Girls > boys at primary level



**SCHOOL BUDGET 2025-26**  
**₹78,572 Cr**

Highest ever allocation



**DIKSHA PLATFORM**  
**182.3M**

Enrolments in 133 languages



**LEARNING CRISIS**  
**44.8%**

Govt school Class 5 reading at grade level (2024 ASER; down from 56.2% in 2008; private schools: 59.3%)

HIGHER EDUCATION



**TOTAL ENROLMENT**  
**4.33 Cr**

One of the world's largest HE systems



**UNIVERSITIES**  
**1,200+**

From 256 in 2000 — 4.7x growth



**GER**  
**28.4%**

Target 50% by 2035



**EMPLOYABILITY**  
**54.81%**

Graduates job-ready (Wheebox 2026)



**GLOBAL INNOVATION**  
**39th**

Up from 81st in 2015



**R&D SPEND**  
**0.7%**

of GDP vs 2-3% global benchmark

SKILLING & EMPLOYABILITY



**PMKVY TRAINED**  
**1.5 Cr+**

Phases 1-4 (2015-2026)



**SECTOR SKILL COUNCILS**  
**38**

Across industries



**VOCATIONAL RATE**  
**5.9%**

Working-age population (from 2%)



**AI JOB DISRUPTION**  
**85 Mn**

Jobs affected by 2030 (WEF)



**WORKFORCE RESKILLING**  
**69%**

Need significant reskilling (WEF 2023)



**GLOBAL SKILLS RANK**  
**58th**

Coursera 2024, up from 67th

EDTECH & DIGITAL LEARNING



**MARKET 2000**  
**₹500 Cr**

CD-ROM era, <3% coverage



**MARKET 2023**  
**US\$7.5B**

World's 2nd largest EdTech market



**MARKET 2030 (PROJ.)**  
**US\$30B**

₹2,50,850 Cr — 4x growth



**FUNDING PEAK (2021)**  
**US\$4.1B**

Half of all global EdTech VC



**FUNDING CRASH (2023)**  
**-87%**

US\$321M — from US\$4.1B peak



**BYJU'S VS PW**  
**US\$22B peak → insolvency (2024)**

vs successful market listing





# India's Education Targets: 2026-2035

School learning outcomes (Class 5 at grade level)

2025-26

**44.8%**  
Govt schools

2035 Target

**80%+**

NIPUN Bharat  
NCF-SE 2023

Higher Education GER

2025-26

**28.4%**

2035 Target

**50%**

NEP 2020, ABC,  
new HEIs

Graduate employability

2025-26

**54.81%**

2035 Target

**80%+**

NIRF, NAAC 2.0, industry linkages

Vocational training participation

2025-26

**5.9%**

2035 Target

**25%+**

PMKVY 4.0, Skill India Digital Hub

International students in India

2025-26

**~50,000**

2035 Target

**500,000**

Study in India programme

Research expenditure (% of GDP)

2025-26

**0.7%**

2035 Target

**2-3%**

National Research Foundation

AI integration in education

2025-26

**PILOT STAGE**

2035 Target

**MAINSTREAM**

AI CoE ₹500 Cr, AI curriculum from Grade 3 onwards

Education financing (% of GDP)

2025-26

**3.9-4.6%**  
(3.1% in 2021-22)

2035 Target

**6%**

NEP 2020 mandate (unmet since 1966)

SECTION 1

# School Education: The Access Revolution (2000-2025)

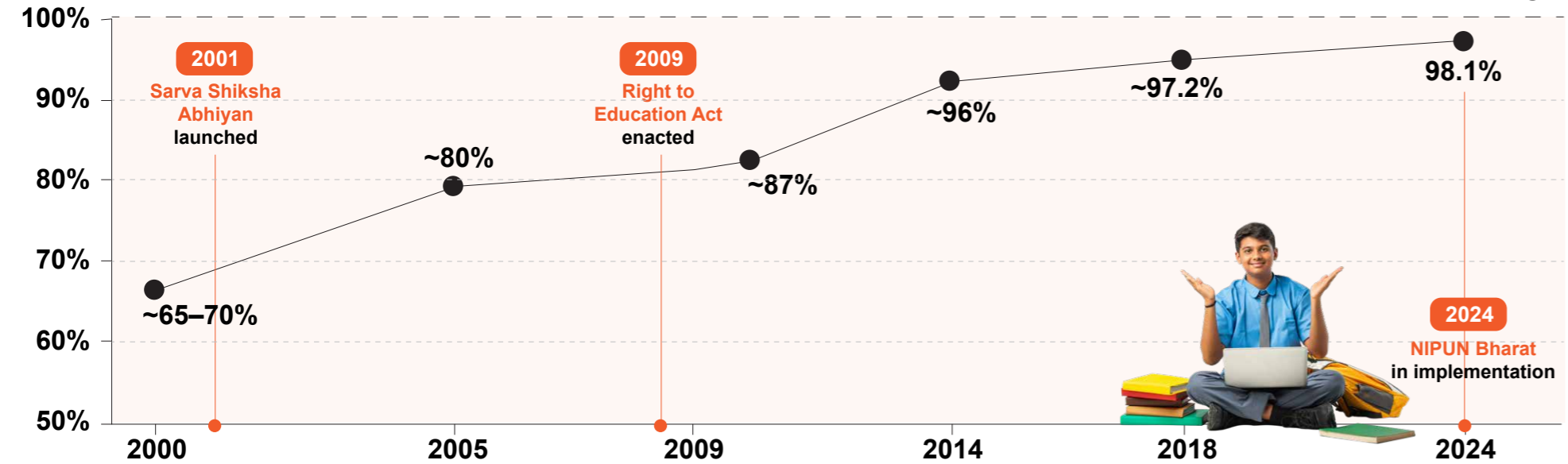
**B**y 2035, the ambition for Indian school education is not merely to keep children enrolled — it is to ensure every child completes foundational learning at grade level. NIPUN Bharat targets universal literacy and numeracy by Grade 3. NCF-SE 2023 mandates competency-based progression over rote examination. The 2035 goal: 80% of government

school Class 5 students reading at grade level, up from 44.8% today. Digital infrastructure through DIKSHA and AI- powered adaptive tools will be the delivery mechanism. But the defining variable is not technology — it is whether India can address the teacher quality and curriculum gap that enrolment growth alone never resolved.



## Enrolment Trend Line (2000–2024)

### Net Enrolment Rate (NER)



### 1.1 The Access Revolution: SSA, RTE and the Enrolment Miracle

At the turn of the millennium, India's school education system faced a challenge of staggering scale. An estimated 25–35 million children between the ages of 6 and 14 were out of school (Ministry of Education / DISE baseline data, 2000–02;

estimates vary by methodology).

The Net Enrolment Rate at primary level stood below 80%. The Gender Parity Index was approximately 0.84 nationally.

Sarva Shiksha Abhiyan, launched in 2001 as the world's largest elementary education programme, delivered infrastructure at

extraordinary scale. By the end of the 11th Five Year Plan (2012), SSA had supported construction of 6.5 lakh school buildings, 18 lakh additional classrooms, 2.3 lakh drinking water facilities, 7.4 lakh toilet blocks, and recruitment of 19.7 lakh additional teachers. The programme enrolled an additional 1.7 crore children since 2004–05, of which 75% were girls and

60% were SC/ST students.

The Right to Education Act, enacted in 2009 and implemented from April 2010, transformed access from a target into a constitutional entitlement for children aged 6–14. By mandating minimum infrastructure norms — toilets, drinking water, playgrounds, and PTR standards — RTE created an enforcement framework that scheme-based programmes could not. The ASER 2024 household survey, covering 6,49,491 children

across 605 rural districts, recorded school enrolment at 98.1% for children aged 6–14.

Gender parity represents perhaps the most remarkable achievement. The Gender Parity Index at primary level rose from 0.64 in 1971 to 0.84 in 2000, reaching 1.01 in 2023–24 — a historic reversal achieved in two generations. Targeted interventions including Kasturba Gandhi Balika Vidyalayas and PM POSHAN — reaching 11.8 crore children across 11.2 lakh schools in 2023–24 — were instrumental.

Indicator	~2000–01	~2010–11	2023–24
NER Primary (%)	~80%	~95%	~95%+
Gender Parity Index	~0.84	~0.98	1.01
GER Secondary Cl. 9–10 (%)	~40%	~55%	78.70%
PTR (Elementary)	40:1	32:1	~25:1
Schools with internet (%)	Negligible	~2%	63.50%
Schools with computers (%)	~5%	~16%	64.70%
School Education Budget (₹Cr)	~10,000	~28,000	73,008



**SCHOOLS**  
**14.7 LAKH**  
World's largest by count

**ENROLMENT (6–14)**  
**98%+**  
From ~65% in 2000

**GENDER PARITY**  
**1.01 GPI**  
Girls > boys at primary level

**SCHOOL BUDGET 2025–26**  
**₹78,572 Cr**  
Highest ever allocation

**DIKSHA PLATFORM**  
**182.3M**  
Enrolments in 133 languages

**PTR IMPROVEMENT**  
**25:1**  
From 40:1 in 2000 — 25 years of progress

## 1.2 The Learning Crisis: Enrolment Without Outcomes

The ASER report, first published in 2005, documented a paradox at the heart of the access revolution. In 2008, 56.2% of Class 5 students in rural India could read a Class 2-level text. By 2018, this had declined to 50.3%. COVID-19 drove it further down to 38.5% in 2022. By 2024, partial recovery to 44.8% has been recorded among government school Class 5 students — described by ASER as “the highest gains in two decades” — but still below 2008 levels. Among

private school students, the figure is higher at 59.3%, underlining that the crisis is concentrated in, though not limited to, the government school system. Enrolment and learning outcomes have moved in opposite directions for a generation.

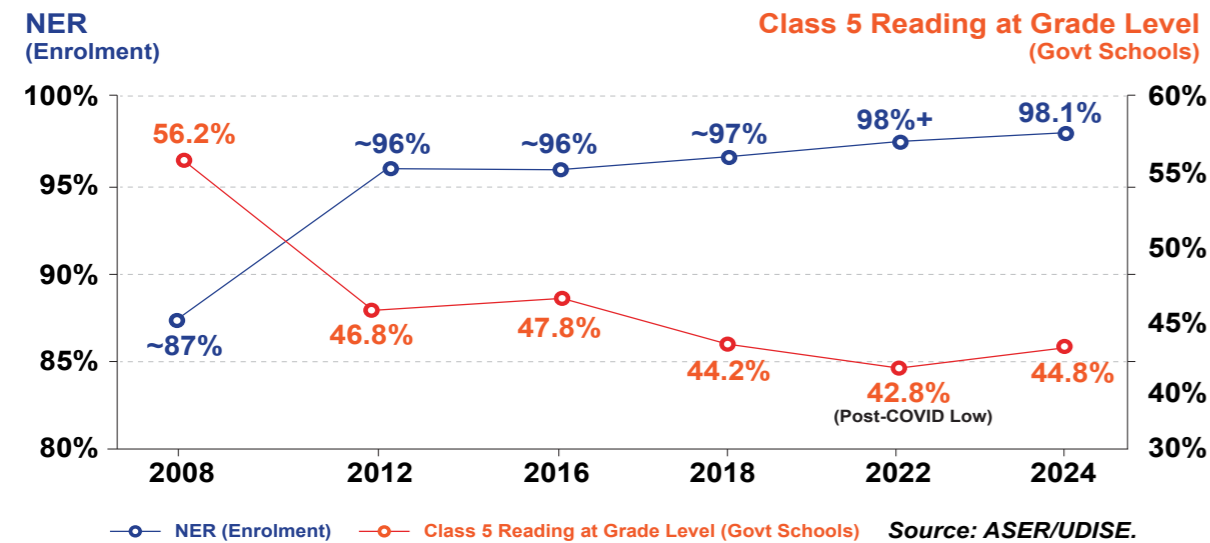
COVID-19 compounded the crisis severely. India’s schools were closed for 69 weeks — among the longest school closures globally — affecting 247 million children. The World Bank projected India could lose over US\$400 billion in lifetime earnings

due to COVID-related learning loss. ASER 2024 showed the strongest foundational learning gains in two decades, with NIPUN Bharat’s focused, data-driven approach producing measurable results. CSF’s 2024–25 assessment of 64,688 schools found 48,061 declared NIPUN. Importantly, ASER 2024 notes that the gains between 2022 and 2024 in arithmetic were “completely driven by government schools” — the system most in need is showing the fastest improvement.

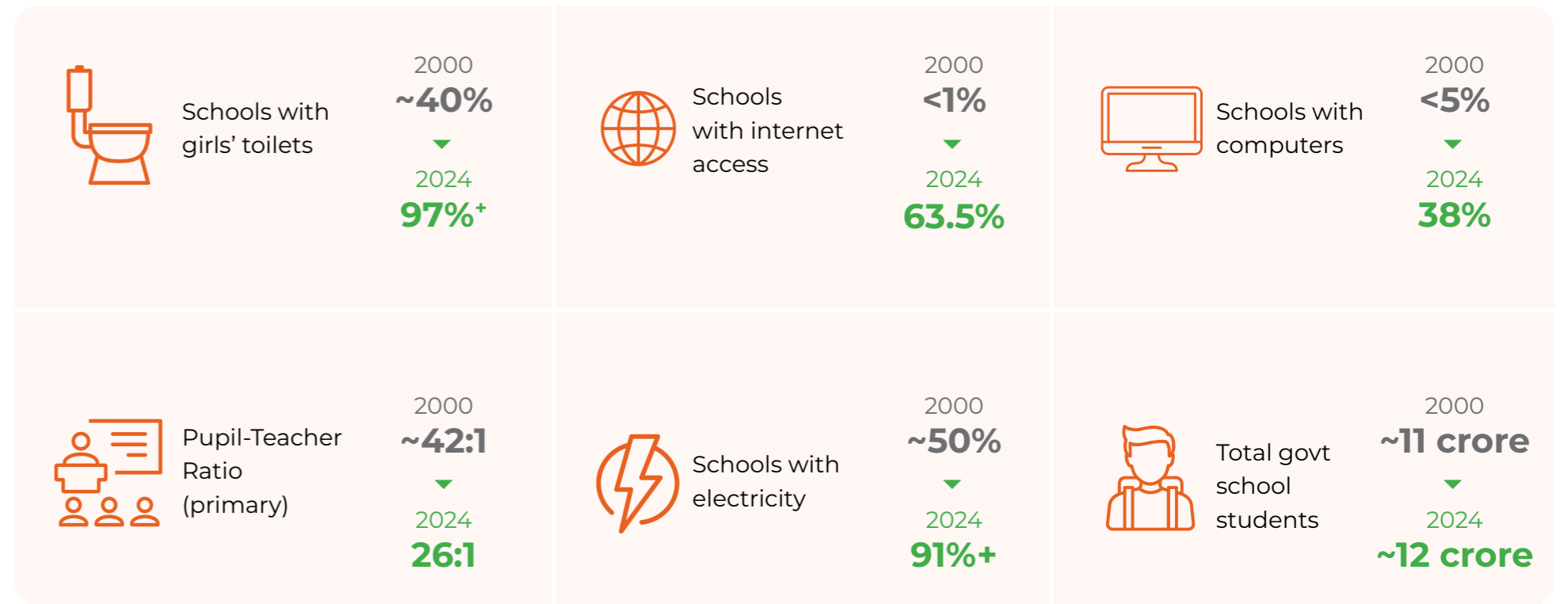
## 1.3 Digital Transformation: DIKSHA and the EdTech State

DIKSHA, launched by NCERT in 2017, became the backbone of India’s school digital learning infrastructure. By 2024, it had logged 182.3 million cumulative enrolments across 133 languages, with AI-powered adaptive assessments deployed at state scale. Schools with internet connectivity rose from negligible in 2000 to 63.5% in 2024–25. Budget 2025–26 announced BharatNet broadband to all government secondary schools and 50,000 Atal Tinkering Labs.

## Enrolment Up, Learning Down



## Enrolment Up, Learning Down



## 1.4 Persistent Challenges: The Unfinished Agenda

Three structural challenges define the unfinished agenda. First, the secondary dropout wall: UDISE+ 2023–24 records approximately 68 lakh total dropouts concentrated at secondary stage, with NER at

secondary level at 77%. Second, the small schools problem: 52.1% of primary schools are under 60 students, creating quality and efficiency challenges that infrastructure investment alone cannot resolve. Third, the financing gap: India’s combined centre-

state education spending ranged between 3.9% and 4.6% of GDP between 2013–14 and 2020–21, falling to approximately 3.1% in 2021–22 — against the 6% target reiterated in NEP 2020 for over five decades without being met.

## Gender Parity Index (1971–2024)



<b>0.64</b> GPI 1971	<b>0.78</b> GPI 1991
<b>0.84</b> GPI 2001	<b>0.98</b> GPI 2010
<b>1.00</b> Parity reached GPI 2018	<b>1.01</b> GPI 2024 (Primary)

**1.09**

(girls ahead)

GPI

2024 (Secondary)

Source:

UDISE+/World Bank.



## NIPUN Bharat Progress Map



Programme launch  
July 2021



Target  
Universal foundational literacy & numeracy by Grade 3, by 2026–27



ASER 2024 finding  
Largest arithmetic gains in Grade 3 in ASER history



PARAKH 2024  
Corroborates ASER improvement in foundational learning

A number of states emerged as early leaders in implementing NIPUN Bharat and achieving foundational learning benchmarks by 2024.



## Schooling and Learning for All: How Far Has India Come? How Far Do We Still Have to Go?

**Rukmini Banerji**

CEO  
Pratham Education Foundation

India has made remarkable progress in school enrolment over the last two decades. Data from ASER and government sources show that even by 2006, more than 90% of children aged 6 to 14 were enrolled in school. States such as Bihar, Rajasthan, and Uttar Pradesh, which earlier had large numbers of out-of-school girls, saw dramatic improvements within a few years. In Bihar, for example, nearly 20% of girls aged 11–14 were out of school in 2006; by 2010, the figure had fallen to below 5%, with similar improvements for boys. Enrollment increased significantly and gender gaps largely disappeared.

While enrolment at the elementary

level is now close to universal, there has also been a major shift in progression to higher grades. Around 2010, Grade VIII enrolment nationally was estimated at 11–12 million students. By 2022, the number had nearly doubled to around 22 million. Children entering Grade I after 2010 are far more likely to continue into secondary education, contributing to the intense competition now seen in board examinations and college entrance tests.

The early 2000s saw strong national and global attention on expanding schooling through initiatives such as the Right to Education Act 2009 and the Millennium Development Goals. At the same time, discussions on learning outcomes also

gained importance. Government-led National Achievement Surveys began measuring grade-level competencies, while ASER, facilitated by Pratham, generated household-based data on basic reading and arithmetic through one-on-one assessments with children.

Over several years, ASER data consistently highlighted three major characteristics of India's primary education system. First, many children in Grade III and above struggled with basic reading and arithmetic even after several years of schooling. Second, there was wide variation in learning levels within the same classroom, making instruction difficult for teachers. Third, children who failed to acquire foundational skills early in primary school showed very limited learning gains in later years.

These findings led to extensive debates and experimentation around foundational learning. Two major approaches gained prominence globally and in India. One is “structured pedagogy,” mainly used in early grades to strengthen classroom instruction. The second is “Teaching-at-the-Right-Level” (TaRL), developed by Pratham in India, which focuses on helping children in Grade III and above acquire foundational

skills according to their current learning level rather than their grade. The TaRL approach has since been adapted in several countries across Africa, Southeast Asia, and Latin America.

The COVID-19 pandemic brought another major shift in India's education landscape. School closures led to widespread experimentation with technology-enabled learning, but also shifted attention from schooling to learning within families. Parents across income groups became more involved in children's education during this period.

There were concerns that economic hardships during the pandemic would reduce school enrolment and cause severe learning losses. ASER 2022 showed that enrolment had returned to pre-pandemic levels, but foundational learning losses were significant.

However, ASER 2024 brought encouraging news. The National Education Policy (NEP) 2020 had emphasised universal access to early childhood education and foundational learning. Data from ASER 2024 showed that more than 75% of three-year-olds

were enrolled in some form of early childhood education. It also showed a sharp decline in underage enrolment in Grade I, reflecting greater adherence to age-appropriate school entry.

Most importantly, ASER 2024 recorded major improvements in foundational learning in early grades. In arithmetic, the proportion of Grade III children performing at Grade II level rose significantly between 2022 and 2024, marking one of the largest improvements seen in the history of learning assessments in India. Learning gains in government schools, especially in rural areas, were particularly notable, and similar trends were reflected in PARAKH 2024 findings.

These improvements are closely linked to the clear policy direction provided by NEP 2020 and the rapid implementation of the NIPUN Bharat mission focused on foundational literacy and numeracy. While learning levels in Grades III to V have largely recovered to pre-COVID levels, there remains a strong need for "catch-up" efforts in upper primary and middle school grades.

India's experience shows that large-scale improvements in schooling and learning are possible when policy, implementation, and data-driven action work together. Over the next five years, the focus must remain on ensuring that every child achieves foundational reading and arithmetic skills by Grade III, while also supporting older children who still need foundational learning support. Continuous tracking, reliable data, and sustained implementation will be critical to ensuring that every child is not only in school, but also learning well.

## Expert Insight

**Large-scale improvements in schooling and learning are possible when policy, implementation, and data-driven action work together but the focus must shift from ensuring every child is in school to ensuring every child is learning well.**



## From Engineers to Innovators: The New Age of Technical Education in India

### Prof TG Sitharam

Former Chairman  
AICTE

India's technical education system has undergone a major transformation over the last 25 years. Between 2000 and 2025, the country witnessed steady growth in research, patents, high-technology exports, startups, and innovation-driven learning. The introduction of the National Education Policy (NEP) 2020 further accelerated this shift, moving education from being degree-oriented to skill-driven, technology-enabled, and innovation-focused.

Learning today is very different from the past. Students now have access to multidisciplinary courses, flexible learning pathways, and outcome-

based education. There is greater emphasis on research, innovation, critical thinking, and real-world problem-solving. Entrepreneurship and industry certifications have become important components of technical education.

Initiatives such as Smart India Hackathon, Kavach, and Toycathon have emerged as strong platforms for innovation and problem-solving. These programmes encourage students to tackle real-world challenges through teamwork, creativity, and rapid prototyping while nurturing an entrepreneurial mindset. Mandatory internships and dedicated internship portals have also strengthened practical

exposure and industry engagement for students.

India has been producing nearly 1.25 to 1.5 million engineers annually over the past two decades. However, rapid expansion also exposed concerns around employability, as many graduates were not adequately prepared for industry requirements. This led to a stronger focus on practical skills, critical thinking, entrepreneurship, and advanced skilling in emerging technologies such as artificial intelligence (AI), robotics, drones, 3D printing, cybersecurity, quantum technologies, and semiconductors.

After 2010, India's growing IT sector created strong demand for software, computing, and data-related skills, prompting education systems to adapt. New disciplines such as data science, cloud computing, and AI became integral to engineering education. Government initiatives including SWAYAM, NEAT, and Skill India expanded access to quality learning and vocational training.

Institutions also responded to NEP 2020 by introducing interdisciplinary programmes, AICTE Idea Labs, Atal

Tinkering Labs, 3D printing and prototyping labs, Centres of Excellence, Centres for Future Skills, and stronger industry partnerships to promote experiential learning.

The most significant transformation came after 2020, when AI and data science programmes expanded rapidly across engineering colleges. Although AI-related courses began around 2018 in over 1,200 institutions, artificial intelligence became central to curriculum and pedagogy by 2025. India's AI talent pool reached nearly 600,000–650,000 professionals in 2024 and is projected to exceed 1.25 million by 2027, accounting for nearly 16 per cent of the global AI talent pool.

AI is no longer just a subject of study; it is increasingly embedded into education systems through personalised learning, automated assessments, and career guidance tools. At the same time, faculty development programmes, including CEEE initiatives, PG certificate programmes, and online FDPs, have helped upskill nearly 300,000 teachers in emerging technologies.

New technologies such as robotics, augmented and virtual reality,

semiconductors, cybersecurity, and quantum computing are also becoming part of mainstream technical education. Institutions are establishing innovation labs and industry-linked centres to provide students with hands-on learning opportunities. By 2025, more than half of students at secondary and tertiary levels had some exposure to vocational training, reflecting a stronger focus on employability-oriented education.

Despite this progress, challenges remain. India's share in global AI patents has declined to below 5 per cent in recent years, highlighting gaps in deep-tech research and innovation. There also continues to be a mismatch between graduate skills and industry expectations, making continuous curriculum reform and stronger academia-industry collaboration essential.

Another defining development has been the rapid rise of startups and entrepreneurship. India is now among the world's largest startup ecosystems, with many ventures driven by AI and deep technology. Students are increasingly becoming job creators rather than only job seekers.

India's journey from 2000 to 2025

reflects a clear shift—from quantity to quality, from scale to skill, from knowledge to application, and from employment to innovation. As the country moves towards the vision of Viksit Bharat 2047, the next phase of technical education will depend on deeper research capabilities, higher quality standards, future-ready skills, and stronger alignment with rapidly evolving technological frontiers. India's campuses must increasingly emerge as hubs of innovation and deep-tech entrepreneurship.

## Expert Insight

**The next phase of technical education must move beyond producing graduates to producing innovators—deep-tech entrepreneurship and research capability are the unfinished work of the access decade.**



## The Changing Contours of Education

**Dr SS Mantha**

Chancellor RB University,  
Nagpur and former Chairman AICTE.

Higher education today is undergoing a profound transition. The change is not merely institutional, but civilizational. Universities, once seen primarily as repositories of knowledge, are evolving into dynamic ecosystems of learning, innovation, and human development. Technology, societal expectations, economic disruptions, and deeper questions about the purpose of education in the 21st century are driving this transformation.

At the centre of this shift is a move from knowledge acquisition to capability creation. Earlier, education focused on mastering content and accumulating information. Today, information is easily accessible, and students are

expected not merely to know, but to interpret, apply, innovate, and adapt. The graduates of the future will not necessarily be those who know the most, but those who can continuously learn, unlearn, and relearn.

Technology has emerged as the biggest disruptor in education. Artificial intelligence, immersive learning environments, and data-driven personalization are reshaping how knowledge is delivered and consumed. Classrooms are no longer limited to physical spaces; they are increasingly hybrid environments where digital and physical realities merge seamlessly. Students in remote regions can now access lectures from global experts, collaborate across borders, and work on

real-world problems from their homes. In this sense, technology has significantly democratized education.

However, while access has expanded, meaningful engagement remains uneven. Lack of smart devices, inadequate bandwidth, and uneven digital infrastructure continue to limit participation for many learners. With the rise of multiple content platforms and ed-tech providers, the challenge today is not merely access to content, but ensuring depth of learning, mentorship, and meaningful human connection in virtual environments.

Another major shift is the growing importance of interdisciplinary and multidisciplinary learning. Contemporary challenges such as climate change, public health, and AI ethics require expertise that cuts across traditional disciplinary boundaries. Universities must therefore move away from rigid departmental silos and evolve into interconnected knowledge ecosystems where engineers study philosophy, artists learn data science, and business leaders understand environmental sustainability. Institutions of the future will need to master integrative intelligence rather than fragmented expertise.

At the same time, higher education faces serious challenges around

employability. Employers increasingly seek skills such as creativity, critical thinking, adaptability, collaboration, and emotional intelligence—qualities that are not easily cultivated through conventional classroom teaching or measured through traditional examinations. As a result, universities must rethink pedagogy and assessment systems. Degrees and grades alone may no longer be sufficient indicators of capability. Increasingly, portfolios, competencies, and evidence of real-world problem-solving are becoming more important in employment markets.

Equity and inclusion also remain major concerns. Despite improvements, India's Gross Enrolment Ratio is still around 30 per cent. While technology has widened access, it has also amplified inequalities, as students from disadvantaged backgrounds often lack digital infrastructure, mentorship, and exposure to modern learning tools. Future educational models must therefore prioritise inclusive design so that innovation does not become exclusionary.

Bridging this divide requires scholarships, digital access initiatives, localized support systems, and stronger public infrastructure. Greater use of public institutions and communication networks, including broadband and broadcasting systems, can help expand

educational reach to underserved areas.

Another important issue is the mental and emotional well-being of students. In an era marked by hyper-competition, uncertainty, and constant comparison, learners face growing psychological pressures. Educational institutions must therefore move beyond viewing students merely as academic performers and instead nurture them as complete human beings.

Looking ahead, universities must expand their role beyond teaching and research to become innovation hubs and societal anchors. Rather than simply responding to change, institutions should actively shape it. Partnerships with industry, government, and communities will become increasingly important in co-creating solutions for real-world challenges.

The boundaries between education and work are also expected to blur further. Lifelong learning models will become essential, with individuals returning to universities multiple times throughout their careers to acquire new skills and knowledge.

Credentialing systems too are likely to evolve. Traditional degree structures will increasingly coexist with modular and stackable credentials, allowing learners to build flexible educational pathways.

Micro-credentials, skill certifications, and experiential learning records may redefine how educational achievement is recognized.

Amid these transformations, one principle must remain central: the preservation of ethical and human values. As technology advances and knowledge expands, higher education must continue to nurture responsible citizens capable of navigating complexity with integrity, empathy, and wisdom. The future of higher education will belong to institutions that embrace flexibility, encourage curiosity, and place learners at the centre of the educational process.

**Expert  
Insight**

**The graduates of the future will not necessarily be those who know the most, but those who can continuously learn, unlearn, and relearn.**

## KEY TAKEAWAYS:

# School Education (2000–2025)



## 01

Access revolution achieved at historic scale: enrolment rose from ~65% to 98.1% for children aged 6–14 in 25 years — one of the great access expansions in modern education history.



## 02

Gender parity milestone reached and sustained: GPI at primary level reached 1.01 by 2023–24, with girls now outenrolling boys. PM POSHAN and KGBVs were pivotal instruments.



## 03

Learning crisis persists alongside enrolment gains: ASER data shows Class 5 reading at Class 2 level fell from 56.2% in 2008 to 38.5% in 2022 (COVID impact) before recovering to 44.8% by 2024 among government school students — still below 2008 levels. Private school students show 59.3%, exposing the access-quality gap.



## 04

COVID-19 caused the deepest learning setback in a generation: 60+ weeks of school closure (longest globally), affecting 247 million children and threatening US\$400 billion in lifetime earnings.



## 05

NIPUN Bharat signals a quality pivot: The 2024–25 assessment shows the strongest foundational learning gains in two decades, proving that focused, data-driven delivery works.



## 06

Digital infrastructure has scaled dramatically: DIKSHA's 182.3 million enrolments in 133 languages and 63.5% school internet connectivity create the foundation for AI-augmented learning by 2030.

SECTION 2

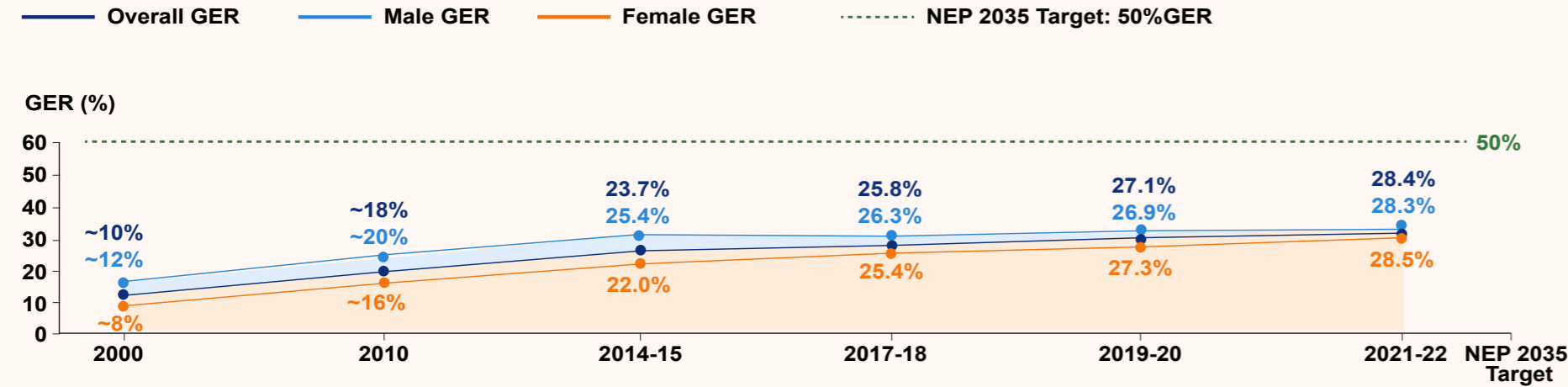
# Higher Education: Expansion, Quality and the Road Ahead

**B**y 2035, India's higher education system must double its Gross Enrolment Ratio from 28.4% to 50% — a NEP 2020 mandate that is arithmetically impossible without dramatic acceleration in low-GER states like Bihar (16%) and Jharkhand (18.6%). More consequentially, the quality of that enrolment must change: the target is 80%+ graduate employability, up from 54.81% today. The

Academic Bank of Credits, NAAC 2.0's outcome-based accreditation, and NIRF's placement transparency are the structural tools. The 2035 higher education system India is building will be judged not by how many universities it has, but by whether its graduates can compete, create, and lead in an AI-augmented economy.



## GER Expansion (2000–2024)



Source: AISHE 2021–22.

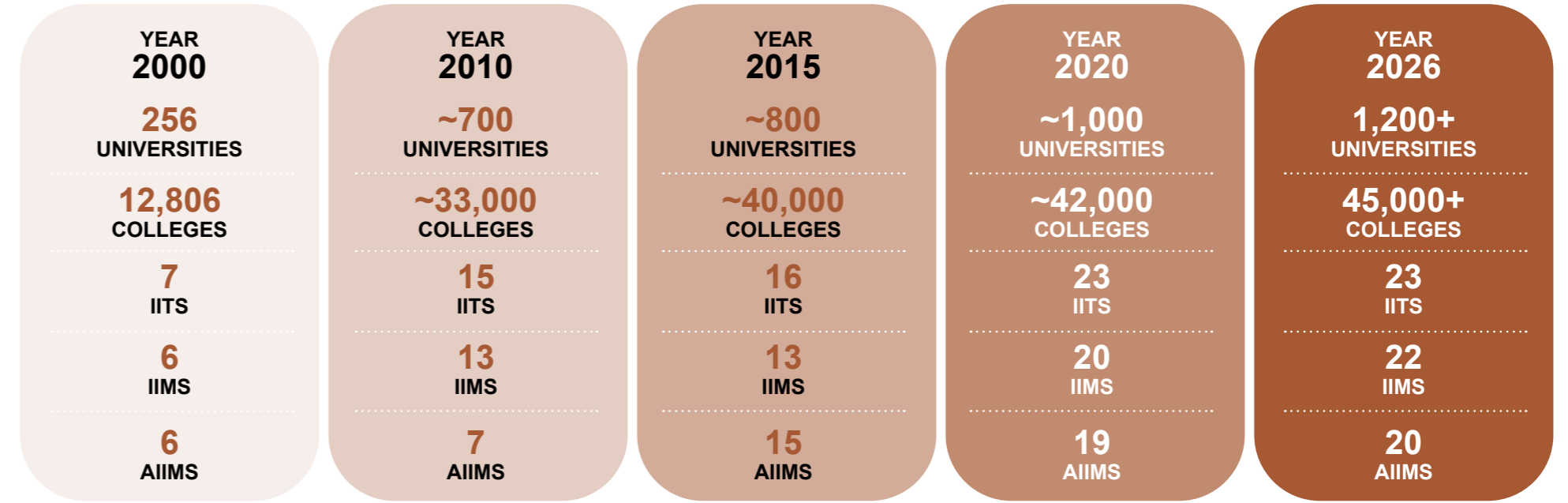
### 2.1 The Institutional Explosion: 256 to 1,200+ Universities

In 2000, India had approximately 256 universities and 12,806 colleges. By 2026, it has over 1,200 universities and 45,000+ colleges — one of the world's largest higher education systems by institutional count. The IIT network grew from 7 to 23 institutions. The IIM network expanded from 6 to

21, culminating in the IIM Act 2017. State private universities grew from near-zero to 471 as of January 2024, reflecting genuine demand from aspirational families willing to pay premium fees for professional degrees. This expansion placed a college within geographic reach of communities that had no higher education access as recently as 2000.

That is a genuine achievement. But the institutions multiplied faster than the quality assurance architecture that should have governed them — from IITs whose graduates compete at the top of global industry and academia, to thousands of private colleges with inadequate faculty, outdated curricula, and no research activity of any kind.

## Institutional Explosion



Institution Type	2000–01	2021–22	2024–25 (est.)
Central Universities	~18	45	54
State Universities	~228	395	456
State Private Universities	~5	~300+	471
Deemed Universities	~100+	121	146–147
Institutes of National Importance	~35	~149	171
Total Universities	~256	1,168	1,200+
Affiliated Colleges	~12,806	45,473	~50,000+

### 2.2 GER, Gender and the Equity Story

Total higher education enrolment grew from approximately 1 crore in 2000–01 to 4.33 crore in 2021–22 — a 4.3-fold increase in two decades. Female GER crossed male GER for the first time in 2017–18 and has remained above it since, reaching 28.5% against male GER of 28.3% in 2021–22. SC enrolment rose 44%, ST enrolment rose 65.2%, and

OBC enrolment rose 44% between 2014–15 and 2021–22 — genuine gains in access for historically marginalised communities. However, equity in enrolment does not translate automatically into equity in outcomes. SC and ST students remain underrepresented at the doctoral level, in STEM disciplines, and in elite institutions. Dropout rates for SC/ST students in higher education are higher than the

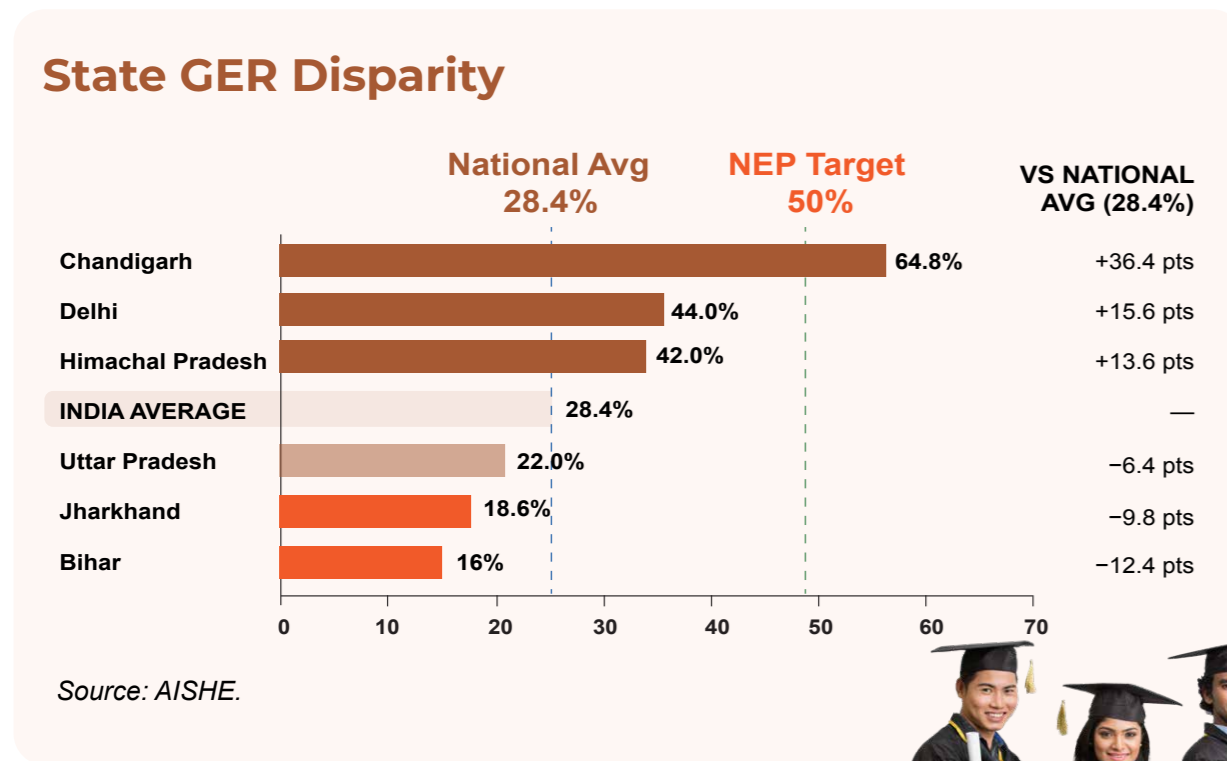
national average, reflecting financial pressure, inadequate academic support, and institutional cultures that have not kept pace with the diversity of their student bodies.

The national GER of 28.4% conceals extreme state-level variation: Chandigarh recorded 64.8%, Tamil Nadu 47%, Delhi 44% — matching OECD levels. Against this, Bihar recorded 16%, Jharkhand 18.6%,

and Uttar Pradesh 22%. This is not a marginal gap — it is a four-fold difference in access between the best and worst performing states. Reaching NEP 2020's 50% GER target by 2035 is arithmetically impossible without dramatic acceleration in India's lowest-GER states — precisely those with the weakest institutional infrastructure, the lowest per-capita public education expenditure, and the greatest demand pressure from large, young populations.

from 3,565 to 14,163 participating institutions by 2026, creating competitive pressures around research output and placement data that no regulatory mandate could replicate. India's Global Innovation Index rank jumped from 81st in 2015 to 39th in 2024 (WIPO GII 2024) — a genuine signal of improving research intensity, though from a very low base.

to the systemic incentives of the system. Universities and colleges are assessed primarily on inputs — faculty qualifications, library resources, physical infrastructure — not on what their graduates can actually do. NAAC's criteria, even in reformed form, weight documentation and self-reporting heavily. NIRF's placement data relies on institution-reported numbers without independent verification. Faculty who have spent their careers in academia teach industry-relevant subjects without industry experience. Curricula are updated through academic committee processes that move on multi-year cycles, while employer needs evolve quarterly. The result is graduates who can reproduce information under examination pressure but struggle to apply it in real workplace contexts. The system produces credentials efficiently but competence inconsistently — and the incentive to change is weak because institutions are not yet held accountable for whether their graduates find employment or what they earn.



### 2.3 Quality, Rankings and the Accreditation Crisis

NAAC has accredited thousands of institutions while covering roughly 28% of all HEIs as of recent estimates. The February 2025 CBI arrest of the chairman of a NAAC inspection committee for accepting bribes to award an A++ rating validated long-standing concerns and accelerated the NAAC 2.0 overhaul — shifting to data-driven evaluation with automated ingestion from AISHE, UDISE+, NPTEL, and research databases, reducing scope for manual manipulation. NIRF grew

### 2.4 The Employability Gap: Why the Credential Doesn't Deliver

The Wheebox India Skills Report 2026 assessed 54.81% of Indian graduates as employable — meaning nearly half emerge without employer-recognised job readiness. The ISR is based on a sample of 300,000–500,000 candidates annually across 29 states, endorsed by AICTE, CII, and AIU; it skews toward more motivated job-seekers, so the true rate across all graduates is likely lower. Management graduates show 78% employability, Engineering 71.5%, Arts and Humanities below 40%.

Understanding why this gap persists requires going beyond the data



**TOTAL ENROLMENT**  
**4.33 Cr**

2021–22 — one of the world's largest HE systems

**UNIVERSITIES**  
**1,200+**

From 256 in 2000 — 4.7× in 25 years

**GER (2024)**  
**28.4%**

From ~10% in 2000. Target: 50% by 2035

**EMPLOYABILITY GAP**  
**45%**

45.19% not employer-ready (Wheebox ISR 2026)

**GLOBAL INNOVATION**  
**39th**

Up from 81st in 2015 — 42-place jump

**R&D SPEND**  
**0.7%**

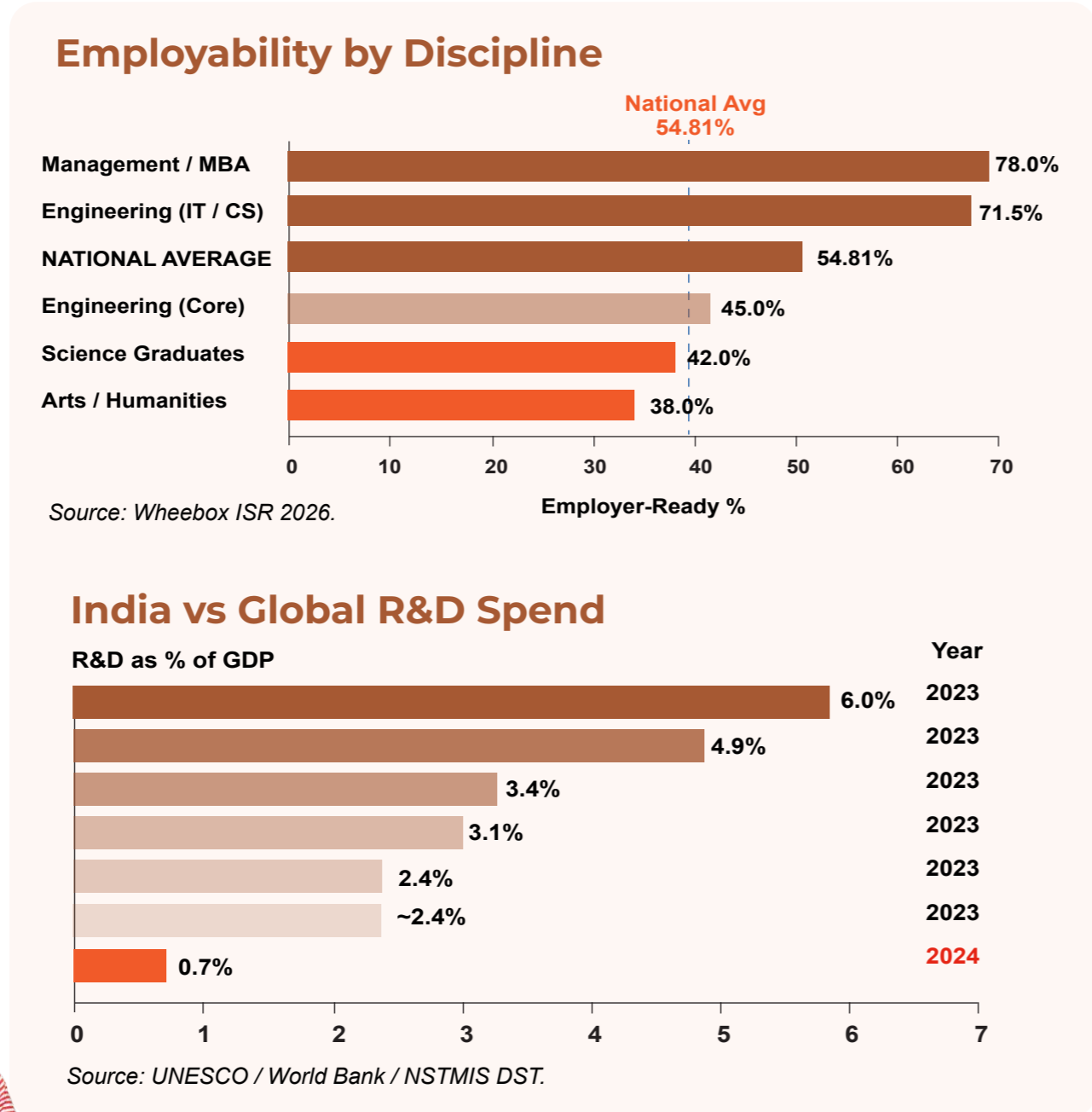
of GDP — vs global benchmark 2–3%



The VBSA Bill 2025, NAAC 2.0, NIRF's expansion, and NEP 2020's industry linkage mandates are all moving in the right direction. But they are early and partial responses to a problem that has been building for 25 years. The institutions that define India's higher education quality in 2035 will be those that start measuring themselves by graduate outcomes today — not because regulators require it, but because in an increasingly transparent system, the data will be visible to the families paying the fees.



**NIRF**  
**₹50,000 crore**  
research funding commitment




**From Access to Transformation: Reimagining India's Engineering Education (2001-2026)**

**Prof V Kamakoti**  
Director  
IIT Madras

Over the past 25 years, India's engineering and technology education ecosystem has undergone a significant transformation, shaped by rapid technological advances, changing industry expectations, and a national push to expand access to quality education.

In the early 2000s, India emerged as a global software services hub during the Y2K era, leading to rapid growth in computing, communication, and mobile technologies. However, engineering education at the time remained largely theory-driven, with limited exposure to real-world problem-solving. This highlighted the need for stronger

alignment between education, research, and practical application. A major turning point came through structured industry-academia collaboration. Institutions began creating ecosystems where industry and academia could work together on research, innovation, and product development. At IIT Madras, the establishment of a research park in the mid-2000s reflected this vision of embedding industry within academia to encourage collaborative research and translational outcomes.

This shift gradually transformed research from being publication-oriented to impact-oriented. Engineering education

also evolved from a purely theoretical model to one focused on combining strong fundamentals with application and innovation.

Experiences from indigenous technology development projects at IIT Madras, demonstrated that traditional curricula were insufficient for preparing students for real-world innovation. As a result, institutions continuously refined academic programmes to better align with emerging technologies, research needs, and industry practices. The focus today is not on reducing academic rigor, but on making knowledge more practical, contextual, and relevant.

The impact of these changes is visible in the rise of innovation and entrepreneurship across campuses. Academic institutions are increasingly becoming centres of intellectual property creation, startup incubation, and enterprise development. IIT Madras, for instance, has witnessed significant growth in startup activity and research translation, reflecting a broader national trend of institutions moving from knowledge dissemination to knowledge creation.

Another major transformation was accelerated by the COVID-19 pandemic, which pushed higher education toward digital learning at scale. Platforms such as NPTEL and SWAYAM demonstrated that quality education could reach learners across geographies through online delivery.

Building on this momentum, hybrid learning models have emerged as a powerful tool for expanding access. IIT Madras introduced flexible B.S. programmes that combine online instruction with in-person assessments, offer multiple exit options, and remove barriers such as rigid entry pathways and age restrictions. With large-scale enrolments, such models are redefining higher education as a continuous learning journey that supports upskilling, reskilling, and lifelong learning.

Policy reforms have also played a crucial role in enabling this transformation. The National Education Policy (NEP) 2020 and related regulatory changes introduced flexibility through multiple entry and exit pathways, parallel academic programmes, and integration

of online learning within formal education systems. These measures have improved both accessibility and inclusivity.

At the same time, engineering education is becoming increasingly interdisciplinary. Modern challenges in areas such as sustainability, healthcare, and finance require expertise across domains. Institutions are responding by enabling students to combine disciplines such as engineering, data science, and finance, while startup ecosystems increasingly thrive on collaborative, cross-functional teams.

At its core, this transformation is guided by the larger goal of making quality education accessible to all. Technology-enabled learning is helping extend educational opportunities to those who may not have access to traditional campuses. Aligned with the vision of the United Nations Sustainable Development Goal 4, the emphasis is on ensuring equitable access to affordable, high-quality education irrespective of geography, age, or socio-economic background.

As India looks ahead, the future of engineering education will be defined by deeper industry integration, scalable hybrid learning, interdisciplinary education, and lifelong learning. The strength of India's higher education system will increasingly lie not only in its institutions, but in its ability to create large-scale societal impact through innovation, inclusion, and relevance.



**The strength of India's higher education system will increasingly lie not only in its institutions, but in its ability to create large-scale societal impact through innovation, inclusion, and relevance.**



## Higher Education: Progress, Problems and the Way Forward

**Prof Sukhadeo Thorat**

Former Chairman  
UGC

India's higher education system has witnessed one of the world's largest expansions since Independence. From a small, elite-oriented system in the 1950s, it has evolved into a vast and diversified network aimed at mass participation, including historically underrepresented groups.

Around 1950, India had nearly 20 universities and about 500 colleges. By 2022–23, the system had expanded to over 1,200 universities and more than 53,000 colleges, along with growth in institutions such as IITs, IIMs, and medical colleges. Higher education has

also diversified from traditional arts, science, and commerce streams to professional and technical disciplines including engineering, agriculture, management, and healthcare.

Expansion has increasingly been supported through distance and online education. Online enrolment reached nearly 6.5 million students in 2024, accounting for a significant share of total higher education enrolment. Regulatory reforms allowing top-ranked universities to offer online degree programmes have further accelerated growth in digital education.

A major structural shift has been the growing dominance of private self-financing institutions after the 1990s. Earlier, higher education was largely led by government and aided institutions. Today, private self-financing universities, colleges, and standalone institutes account for a substantial share of enrolments, particularly in professional education. A majority of students in engineering and management programmes are now enrolled in private institutions, while the role of public and philanthropic institutions has comparatively declined.

The rapid expansion of institutions has improved the Gross Enrolment Ratio (GER) significantly. From less than 1 per cent in the early years after Independence, the GER has risen steadily to nearly 30 per cent in recent years. This reflects the gradual massification of higher education in India.

Despite this progress, several structural challenges remain. Access to higher education continues to vary sharply across income and social groups.

Students from lower-income households, Scheduled Castes (SCs), and Scheduled Tribes (STs) remain underrepresented compared to higher-income and socially advantaged groups.

The gap is even more visible in private and professional education, where high fees create barriers for economically weaker sections. Fees in private unaided institutions are several times higher than in government colleges, making professional courses less accessible for disadvantaged students. As a result, low-income groups and marginalised communities continue to face limited access to courses linked to better employment opportunities.

Higher education is also struggling with issues related to employability and quality. A significant proportion of graduates do not meet industry expectations because of skill mismatches between academic training and labour market requirements. The digital divide further deepens inequality, as many students from rural and economically weaker backgrounds lack access to reliable internet connectivity and digital devices needed for online learning.

Another major concern is the shortage of faculty in public institutions. Many colleges and universities continue to operate with large vacancies in teaching positions, resulting in poor faculty-student ratios that affect teaching quality and academic mentoring.

Addressing these challenges requires stronger public investment and inclusive policies. Equal access to quality higher education, especially professional education, can be improved through scholarships, freeships, subsidised hostels, and affordable or interest-free education loans for disadvantaged students.

At the same time, public funding for higher education needs substantial enhancement. Government expenditure on higher education remains well below recommended levels. Increased investment is essential not only to improve infrastructure, faculty strength, and digital access, but also to achieve the National Education Policy (NEP) 2020 target of 50 per cent enrolment in higher education by 2035.

India's higher education journey reflects remarkable progress in expansion and diversification. However, the next phase of transformation must focus on equity, quality, employability, and affordability to ensure that higher education becomes a genuine instrument of social mobility and national development.

**Expert  
Insight**

**The next phase of transformation must focus on equity, quality, employability, and affordability to ensure that higher education becomes a genuine instrument of social mobility and national development.**



## Engineering Education in India: From Expansion to Relevance

**Prof V Ramgopal Rao**

Vice Chancellor  
BITS Pilani Group of Institutions

Over the last 25 years, engineering education in India has undergone a major transformation. The scale of expansion has been remarkable. Higher education enrolment has risen to around 44 million students from 35 million in 2014-15, while the Gross Enrolment Ratio has increased from 23.7% to 28.4%. These are important milestones in expanding access and democratizing educational opportunity.

However, engineering education cannot be judged by scale alone. The more important question is whether the system has become more relevant, rigorous, and aligned with the needs of a rapidly evolving economy. On that front, the picture remains mixed.

India today has one of the world's largest engineering education systems. AICTE-approved BTech intake for 2025-26 is close to 1.6 million seats, reflecting the enormous size of the sector. Yet the real challenge is not producing engineers in large numbers, but producing engineers with depth, adaptability, and strong problem-solving abilities.

One major distortion is the overwhelming concentration of student demand in computer science and related fields, while core disciplines such as civil, mechanical, electrical, chemical, and materials engineering have become less attractive to students. This decline is not because these disciplines have lost relevance, but because the

system has often failed to demonstrate their connection with industrial growth, national priorities, and future technologies.

Engineering education cannot be reduced to a race for software jobs. A country aspiring to build advanced manufacturing, semiconductors, mobility systems, clean energy infrastructure, healthcare technologies, and defence capabilities must maintain a strong core engineering base. India's semiconductor ambitions illustrate this clearly. Under the Chips to Startups initiative, the government has outlined a long-term goal of training 85,000 engineers in semiconductor design and related areas, showing how national priorities must shape educational priorities.

The National Education Policy (NEP) has rightly emphasised multidisciplinary learning, flexibility, creativity, and stronger links between education and employability. These are important reforms, but policy intent alone is insufficient.

A major weakness in Indian engineering education is that it remains heavily classroom-driven, examination-oriented, and theory-focused. In many institutions,

students graduate without sufficient exposure to designing, building, testing, problem-solving, or working closely with industry and society. Engineering, by its nature, must be learned through practice and experimentation.

This is where the gap between leading institutions and the rest becomes evident. Strong institutions encourage undergraduate research, project-based learning, startup culture, internships, and industry immersion. Internationally, experiential learning is central to engineering education. Institutions such as MIT promote undergraduate participation in research, while many global universities integrate cooperative education models into mainstream academics.

India too has successful examples. BITS Pilani's long-standing Practice School model and work-integrated learning programmes demonstrate that experiential education can be implemented effectively at scale. This is the direction Indian engineering education must pursue more decisively.

The employability challenge also remains significant. Even as demand rises for skills in AI, semiconductors, machine learning, and data science,

many graduates continue to compete for a narrow range of software jobs. This highlights the risks of degree expansion without adequate skill depth and diversification.

At the same time, engineering education should not focus only on employability. Institutions must produce not only job seekers, but also researchers, innovators, entrepreneurs, and technology creators. India's long-term economic strength will depend on its ability to create technologies, products, and enterprises rather than simply supplying talent to global firms.

This requires stronger research and innovation ecosystems within universities. Research cannot remain confined to a few elite institutions, nor can innovation be treated as an extracurricular activity. If India aims to become a knowledge economy, research, innovation, and technology translation must become integral to education itself.

The future of engineering education in India depends on moving from expansion to substance. The system needs fewer rigid silos and more multidisciplinary pathways; fewer passive lectures and more active problem-solving; stronger fundamentals

alongside stronger application. It also needs deeper industry engagement, greater faculty interaction with industry, and more opportunities for students to work in laboratories, startups, factories, and real-world environments.

India has already demonstrated its ability to build scale. The next challenge is to build a system that produces not just more engineers, but better engineers—individuals capable of thinking critically, working across disciplines, and solving problems that matter.



**The next challenge is to build a system that produces not just more engineers, but better engineers individuals capable of thinking critically, working across disciplines, and solving problems that matter.**

## KEY TAKEAWAYS:

# Higher Education (2000–2025)



01  
Extraordinary scale achieved: India grew from 256 universities and 1 crore students in 2000 to 1,200+ universities and 4.33 crore students — the third-largest higher education system globally.



02  
Gender milestone: Female GER overtook male GER in 2017–18 and has remained higher since — a historic achievement driven by targeted scholarship and access policies.



03  
Quality concentrated at the apex: IITs, IIMs, and IISc are globally competitive. The mass tier — thousands of private colleges and state universities — remains significantly below employability benchmarks.



04  
Accreditation system under reform: NAAC covers fewer than 28% of HEIs. The February 2025 bribery scandal and NAAC 2.0 overhaul signal that quality assurance is finally being taken seriously.



05  
The employability gap is the defining problem: 45% of graduates were not assessed as employer-ready (Wheebox ISR 2026). Employers spend 3–6 months on post-hiring training. The credential is not the competence.



06  
NEP 2020 and the VBSA Bill 2025 are the most far-reaching reforms in a generation: flexible degrees, Academic Bank of Credits, unified regulation, and 50% GER target by 2035

## SECTION 3

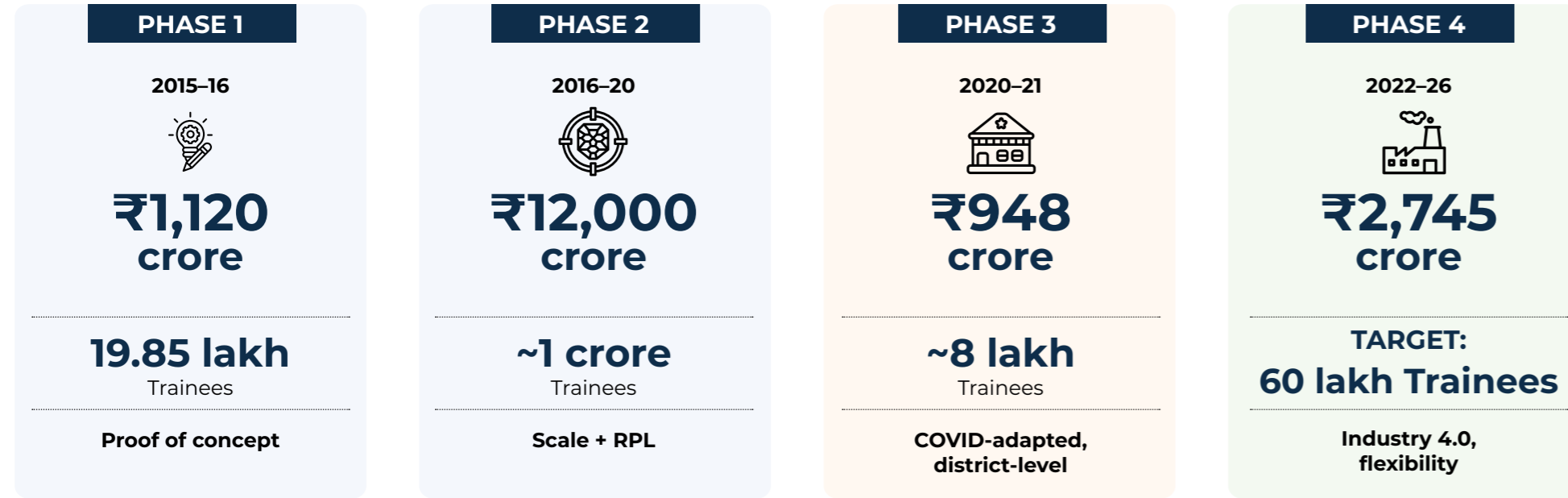
# Skilling, Employability and the AI Inflection Point

By 2030, the World Economic Forum projects 85 million Indian jobs will be restructured by AI and automation — and 97 million new roles will emerge. The net is not catastrophic, but the transition is not automatic. India's skilling system must evolve from supply-driven certificate delivery to demand-driven, employer-aligned capability building. The 2035 target: 25% vocational

training participation (from 5.9% today), with reskilling pathways that reach the workers most vulnerable to automation — not just those already digitally equipped. PMKVY 4.0, the Skill India Digital Hub, and real-time employer demand signals must replace the government-target-driven model that has produced certificates without placements for a decade.



## PMKVY 4-Phase Timeline



Ministry of Skill Development and Entrepreneurship

### 3.1 From Fragmentation to Architecture (2000–2014)

In 2000, India's skill development sector barely existed as a formal sector. Only 2% of the workforce aged 15–59 had received formal vocational training — against 60–80% in developed economies. The National Skill Development Corporation (NSDC), established in July 2009,

represented the first serious attempt to build a coordinated skill training system at national scale. Between 2009 and 2014, NSDC created 21 Sector Skill Councils and the National Skill Qualification Framework (NSQF) — a 10-level qualification matrix aligned to learning outcomes rather than time spent in training. This was essential groundwork. But the architecture had a flaw built

in from the start: it was supply-driven. Government set training targets. Training providers delivered against those targets. Whether employers actually hired the trained candidates — and whether the skills matched what employers needed — was measured imperfectly and incentivised weakly. That flaw would compound across every subsequent phase.

### 3.2 Scale Phase: PMKVY and the Skill India Mission (2015–2026)

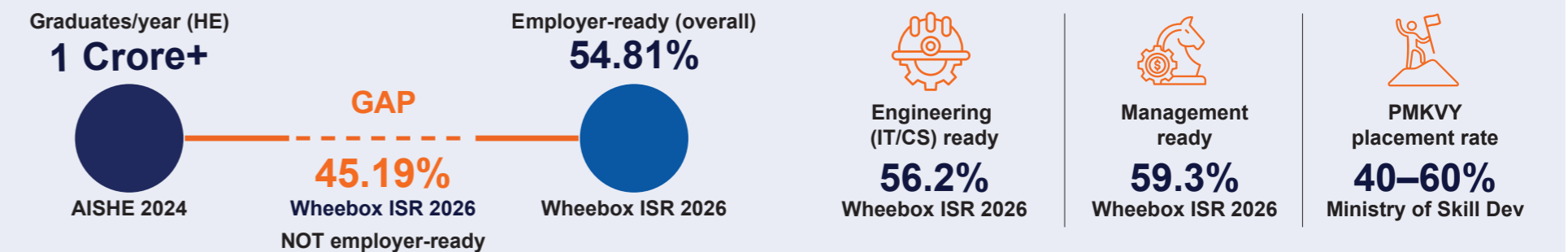
The Skill India Mission, launched July 15, 2015, shifted the gear from architecture to mass delivery. PMKVY Phase 1 trained 19.85 lakh candidates. Phase 2 with a ₹12,000 crore outlay introduced Recognition of Prior Learning (RPL) — certifying the existing skills of workers in the informal economy, a critical but often undercounted component: RPL's share grew from 15% of certifications in Phase 1 to 45% in Phase 2. This distinction matters: RPL certifications confirm existing competencies; Short-Term Training (STT) represents genuinely new skill

acquisition. The headline “1.5 crore trained” figure spans both. PMKVY 4.0, launched in 2024, targets 20 lakh youth over 2024–28 with a focus on Industry 4.0 skills, green jobs, and emerging sectors. Formal vocational training participation rose from 2% in 2004–05 to 5.9% of the working-age population in 2023–24 — genuine progress, but still far below the levels required for India's demographic dividend to yield economic dividends.

The supply-driven flaw persisted through all four PMKVY phases. Placement rates of 40–60% — consistent across phases despite design improvements — are not the result of poor training quality alone.

They reflect a more fundamental problem: training is being designed around government targets and training provider capacity, not around employer demand. The courses most over-supplied (retail sales, fitter, electrician) are not those with the sharpest labour market shortages. The courses in highest employer demand (cloud operations, AI data annotation, EV maintenance, healthcare technicians) are those least represented in training volumes. Until skill training is restructured around real-time employer demand signals rather than government approval of pre-set course lists, the placement gap will persist regardless of how many people are trained.

### Employability Paradox



### 3.3 The Employability Paradox: Why Credentials Don't Convert

India's higher education system produces approximately 1.5 million engineering graduates and over 4 million graduates annually. The India Skills Report 2026 finds 54.81% employability — up from 33% in 2014, but still implying that nearly half of India's graduate cohort is not employment-ready. The reasons are structural and consistent across years of employer feedback: inadequate English communication, weak critical thinking and problem

decomposition, limited digital literacy even among graduates of IT-adjacent programmes, and an almost universal gap in what employers call 'professional readiness' — the ability to work in teams, manage client expectations, and adapt to ambiguous problems.

These are not random deficits. They are the predictable output of an education system that has been optimised for examination performance rather than competency development. Curricula are designed around board exams

and entrance tests. Assessment rewards recall over reasoning. Faculty who have rarely worked in industry teach subjects disconnected from practice. The result is graduates who can reproduce information under time pressure but struggle to apply it in real workplace contexts. Employers across IT services, manufacturing, and organised retail consistently report spending 3–6 months on post-hiring training to bring graduates to baseline productivity — treating formal education as a screening mechanism, not a preparation one.

### 3.4 The AI Inflection Point: 85 Million Jobs in Transition

Between 2020 and 2026, the conversation around employability in India fundamentally shifted. McKinsey Global Institute's analysis suggests 30% of current work activities in India are automatable by 2030. Roles in back-office operations (50% tasks automatable), customer service (40%), and routine manufacturing (25%) face the highest displacement risk. A 2024 NASSCOM survey found 62% of IT services firms had already deployed AI tools reducing junior-level hiring requirements by 15–30%. Simultaneously, AI and ML Specialists (demand growing 45% year-on-year), Data Scientists, Cloud Engineers, and Cybersecurity Specialists are the fastest-growing job families.

The World Economic Forum's Future of Jobs Report 2023 projected that 85 million jobs in India would be disrupted by AI and automation by 2030 — not necessarily eliminated, but restructured in ways that render current skill sets obsolete. Approximately 69% of the Indian workforce, the report estimated, would require significant reskilling

to remain employable in the AI-augmented economy. The WEF also projects 97 million new roles emerging in the same period — but the skills gap between displaced roles and emerging ones is not a simple substitution. A data entry operator cannot become a machine learning engineer through a 3-month training programme. The challenge India faces is not retraining scale alone; it is enabling cognitive and professional mobility across a skills chasm that existing training models were not designed to bridge.

The equity dimension of AI disruption deserves explicit attention. The professionals most able to reskill — those with existing digital literacy, English fluency, broadband access, and disposable income for online courses — are precisely those least at risk of displacement. The workers most vulnerable to AI-driven job restructuring — those in routine manual or low-skill cognitive roles, often with limited digital literacy and working in the informal sector — are the least equipped to participate in voluntary upskilling. The AI transition risk is, in effect, a magnifier of existing class and skill divides. A national reskilling strategy that reaches only the already-advantaged will solve the wrong problem.

### AI Disruption Risk Matrix (2x2 Quadrant)



#### FUTURE OF JOBS 2030



**PMKVY TRAINED**  
**1.5 Cr+**  
Cumulative, Phases 1–4  
(2015–2026)

**EMPLOYABILITY RATE**  
**54.81%**  
Graduates job-ready (Wheebox 2026)

**JOBS AT RISK**  
**85 Mn**  
Disrupted by AI by 2030 (WEF 2023)

**VOCATIONAL TRAINING**  
**5.9%**  
Working-age participation  
(from 2% in 2004)

**GLOBAL SKILLS RANK**  
**58th**  
Coursera 2024 — up from 67th

**IT FIRMS USING AI**  
**62%**  
Reducing junior hiring 15–30%  
(NASSCOM 2024)

Job Category	Automation Risk	Employment Direction	Reskilling Path
Data entry / BPO / back-office	Very High (50% tasks)	Decline -30%	Immediate transition required
Call centre / customer service	High (40% tasks)	Decline -25%	Voice-to-digital pivot
Routine manufacturing	High (25% tasks)	Decline -20%	Technical upskilling
Junior software / code review	Medium	Stable-Decline	AI-augmentation skills
AI & ML Specialists	Very Low	Growing +45% YoY	High entry barrier, critical need
Data Analysts & Scientists	Low	Growing +35% YoY	Accessible reskilling path
Cloud / DevOps Engineers	Low	Growing +30% YoY	Certification pathways exist
Cybersecurity Specialists	Very Low	Growing +40% YoY	Critical national shortage

## Job Families: Growing vs Declining

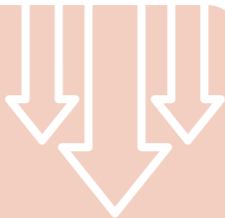
### Fastest Growing (2024–2030)

AI / ML engineers  
Renewable energy technicians  
Cybersecurity analysts  
Healthcare workers  
Supply chain specialists  
EdTech product managers



### Fastest Declining (2024–2030)

Data entry clerks  
Bank tellers  
Travel agents  
Postal workers  
Assembly line workers (routine)  
Telephone operators



## Skilling Participation Rate Trend

2004  
India Rate  
**2.0%**  
Germany ~65%

2010  
India Rate  
**2.8%**  
South Korea ~96%

2015  
India Rate  
**3.5%**  
UK ~52%

2020  
India Rate  
**4.2%**  
Global avg ~40%

2024  
India Rate  
**5.9%**  
NEP 2020 target:  
50%



## The Transformational Growth of Indian Higher Education: 2000-25 and Beyond

### Gautam Lakhamraju

COO  
Great Lakes Institute of Management

India's higher education system has undergone a major transformation between 2000 and 2025, evolving from a capacity-constrained model into a large, diverse, and increasingly market- and technology-driven ecosystem offering far greater opportunities for students.

In the early 2000s, despite economic liberalization, access to higher education remained limited. The Gross Enrolment Ratio (GER) was around 10%, and the system was dominated by a small number of premier institutions with limited seats and intense competition. Even meritorious

students often struggled to secure quality education opportunities.

Over the next two decades, capacity expanded significantly, with a sharp rise in institutions across engineering, management, science, and medicine. However, this rapid expansion also exposed persistent concerns around quality and employability, particularly among lower-tier institutions.

From around 2015 onward, higher education began shifting toward digital learning and a skills-first approach. The growth of edtech platforms enabled large-scale

access to industry-relevant learning, test preparation, and online degrees. This marked a move away from purely degree-centric education toward employability-focused learning, with increasing emphasis on analytics, coding, digital marketing, and management skills.

Simultaneously, the rise of liberal education and interdisciplinary programmes diversified the higher education landscape beyond traditional engineering-focused pathways.

A major turning point came with the National Education Policy (NEP) 2020, which introduced multidisciplinary learning, flexible degree structures, and academic mobility through credit systems, while setting a target of 50% GER by 2035. The COVID-19 pandemic further accelerated digital adoption, making higher education more accessible, technology-enabled, and outcome-oriented. By 2025, India's GER is approaching 30%, reflecting this expanded access.

Looking ahead, the next phase of transformation will be driven by artificial

intelligence, changing workforce demands, and India's growing economic ambitions. As generative AI automates routine technical tasks, the focus will increasingly shift toward higher-order capabilities such as creativity, critical thinking, communication, design, and interdisciplinary problem-solving. Institutions will need to move beyond content delivery toward creating environments that foster innovation and adaptability.

AI is also reshaping entrepreneurship by enabling high-impact ventures with smaller teams, making entrepreneurship an increasingly important pathway alongside traditional employment. As job roles evolve rapidly, lifelong learning and continuous reskilling will become essential.

At the same time, research priorities must shift from publication volume toward meaningful innovation and societal impact.

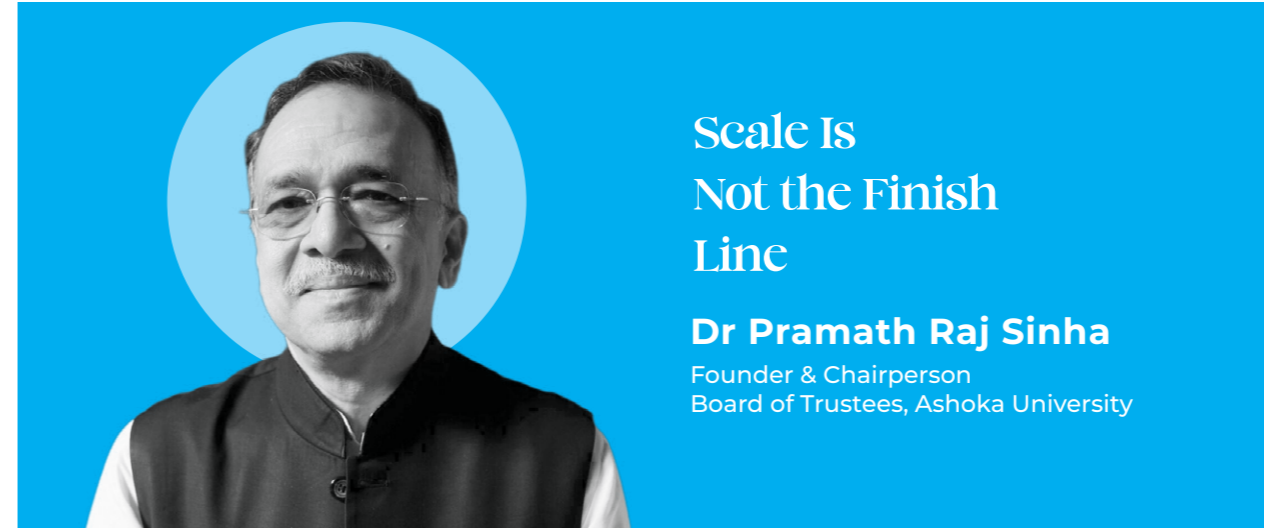
To fully leverage its demographic dividend in the AI era, India must

move decisively toward a capability-driven education system focused on adaptability, skills, and lifelong learning. This will require sustained investment in faculty, research, and learning infrastructure, along with wider adoption of experiential and work-integrated education.

Ultimately, India's strength will depend not on the number of graduates it produces, but on how effectively it develops agile, innovative, and AI-ready talent.

## Expert Insight

**India's strength will depend not on the number of graduates it produces, but on how effectively it develops agile, innovative, and AI-ready talent.**



## Scale Is Not the Finish Line

**Dr Pramath Raj Sinha**

Founder & Chairperson  
Board of Trustees, Ashoka University

Many institutions that today feature among India's leading private universities were established after 2000. They were built by founders who believed India needed universities centred around stronger academics, interdisciplinary learning, and closer engagement with the world.

That belief reflects the broader transformation of Indian higher education over the last twenty-five years. India expanded higher education at scale while also building new institutional models. State policy, private initiative, public investment,

and philanthropy all contributed to this expansion, creating a system increasingly defined not only by size, but also by experimentation and diversity.

Access improved steadily during this period. India's Gross Enrolment Ratio (GER) in higher education rose from around 10% in 2000 to 28.4% in 2021-22. Deregulation supported this growth, with the number of universities crossing 1,280. State private universities now account for over 42% of the total. Deemed-to-be universities have also expanded

institutional diversity across fields such as management, law, design, and science.

Institutions including Chandigarh University, Manipal, SRM, and VIT pioneered multi-campus models, while public institutions expanded in parallel. India today has 23 IITs, 22 IIMs, and 20 AIIMS, with several added after 2000. Expanded seat availability, wider geographic distribution, and growing scholarship support have made higher education more inclusive than at any earlier point in India's history.

However, expansion alone cannot define success. Countries that invested systematically in research, faculty development, and institutional quality after expanding access achieved stronger outcomes. China's leading universities now rank among the world's top institutions, while Singapore's NUS and NTU have established global leadership positions. India must now focus on what comes after expansion.

Quality has improved, but substantial gaps remain. In the QS World University Rankings 2026, India had 54 institutions featured globally, though a large majority ranked outside the top 500. At the same time, India's performance in subject-specific rankings has strengthened steadily.

Domestically, the NIRF rankings have introduced large-scale public benchmarking and accountability over the last decade. Yet the next phase requires institutions to move beyond competing only with one another and instead benchmark themselves against global standards and their own highest potential.

A new generation of private universities has demonstrated that strong teaching, original research, and academic independence can coexist within Indian institutions. Though still exceptions rather than the norm, these universities have reshaped perceptions of what Indian higher education can become.

Several STEM-focused institutions are also integrating humanities and social sciences into their curricula. New institutional models have emerged, including universities focused on transportation and logistics, as well as online degree programmes from top-ranked institutions reaching students beyond traditional residential campuses. These developments reflect growing recognition that India needs more innovative approaches to employability, skilling, and industry engagement.

At the same time, state public universities continue to support a large share of student enrolment because affordability and access remain critical considerations for millions of families. This highlights an important distinction between the number of institutions and the scale of enrolment they support.

The long-term strength of the system also depends on clarity of institutional purpose. Not every institution needs

to excel in every area, but each institution must develop areas of genuine strength and distinction.

Policy reforms have increasingly moved in this direction. The National Education Policy (NEP) 2020 placed multidisciplinary learning, inclusion, research quality, and institutional autonomy at the centre of India's higher education agenda.



**The long-term strength of the system depends on clarity of institutional purpose — not every institution needs to excel in every area, but each must develop areas of genuine strength and distinction.**

## KEY TAKEAWAYS:

# Skilling & Employability (2000–2026)



### 01

Infrastructure built from scratch: India went from near-zero formal skill training in 2000 to 38 Sector Skill Councils, 15,000 ITIs, and PMKVY training 1.5 crore citizens — the world's largest skill development programme by volume. Note: this includes both new skill training (STT) and Recognition of Prior Learning (RPL), which certifies existing skills of informal workers.



### 02

Volume achieved; quality and placement lag: PMKVY placement rates of 40–60% reveal a persistent gap between training completion and employment. The credential does not guarantee the competence.



### 03

Employability paradox deepens: Despite more graduates and trainees than ever, Wheebox ISR 2026 found only 54.81% of tested graduates employer-ready. Employers spend 3–6 months on post-hiring remediation.



### 04

AI disruption is the defining new challenge: WEF projects 85 million Indian jobs restructured by 2030 (not necessarily eliminated — 97 million new roles also projected). The skills gap between displaced roles and emerging AI-adjacent ones is not bridged by existing training models.



### 05

Voluntary upskilling is accelerating: Coursera GenAI enrolments grew 107% YoY in India. NASSCOM FutureSkills AI modules rose to 38% of all enrolments. But this wave disproportionately benefits those already skilled.



### 06

Critical policy gap: No comprehensive national reskilling strategy exists targeting the workers whose roles are being restructured by AI. This is the most consequential unaddressed challenge in India's education and employment landscape — and the WEF's 97 million new roles projection will only materialise if that transition infrastructure is built.

## SECTION 4

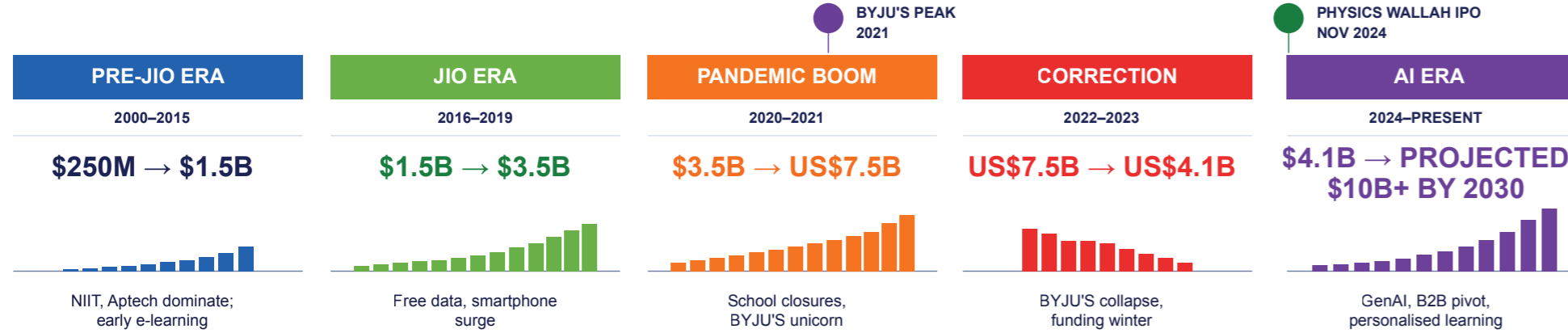
# The Rise of EdTech and Digital Learning

By 2030, India's EdTech market is projected to reach USD\$30 billion — a fourfold increase from today. But the lessons of the BYJU'S collapse are now written into the sector's DNA: scale without unit economics destroys value, and user counts without learning outcomes destroy trust. The next EdTech era will be defined by AI-powered adaptive learning, hybrid delivery models that serve Tier-2 and Tier-3 learners, and a fundamental

shift from B2C consumer spending toward B2B institutional and government partnerships. DIKSHA's 182 million enrolments across 133 languages show that public digital infrastructure can operate at population scale. The question for the next decade is whether AI personalisation can finally close the digital divide — or will widen it further.



## EdTech Market Evolution Era Bands



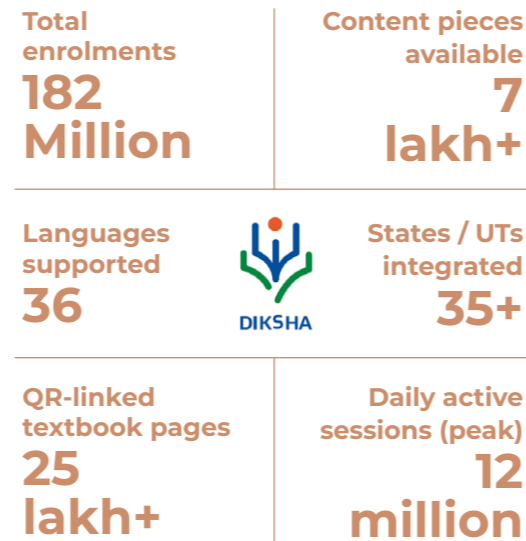
### 4.1 From CD-ROMs to Connectivity (2000–2014)

In 2000, India's education technology sector barely existed. Total market: less than ₹500 crore, serving perhaps 2–3% of urban English-medium students. Broadband penetration climbed from under 1 million connections in 2005 to 15 million by 2014. NPTEL, the joint IIT-IISc initiative, reached hundreds of thousands of engineering students. By 2014, BYJU'S was transforming from offline test-prep to an app-based K–12 platform, and Unacademy had launched as a YouTube channel for UPSC preparation. The infrastructure for scale was being assembled.

### 4.2 The Jio Revolution and the VC Discovery (2015–2019)

The launch of Reliance Jio in September 2016 rewired India's digital landscape. Data costs crashed from ₹250 per gigabyte (2016) to ₹10 per gigabyte (2018) — a 96% reduction that transformed the economics of digital consumption. BYJU'S reached 35 million users and a US\$5.75 billion valuation by 2019. Total EdTech funding grew from under US\$100 million across 2010–2014 to US\$1.4 billion by 2020 — more than the previous fifteen years combined. Freemium models, celebrity-led marketing, and high-pressure sales tactics crystallised as the dominant commercial playbook.

### DIKSHA Impact Spoke Chart



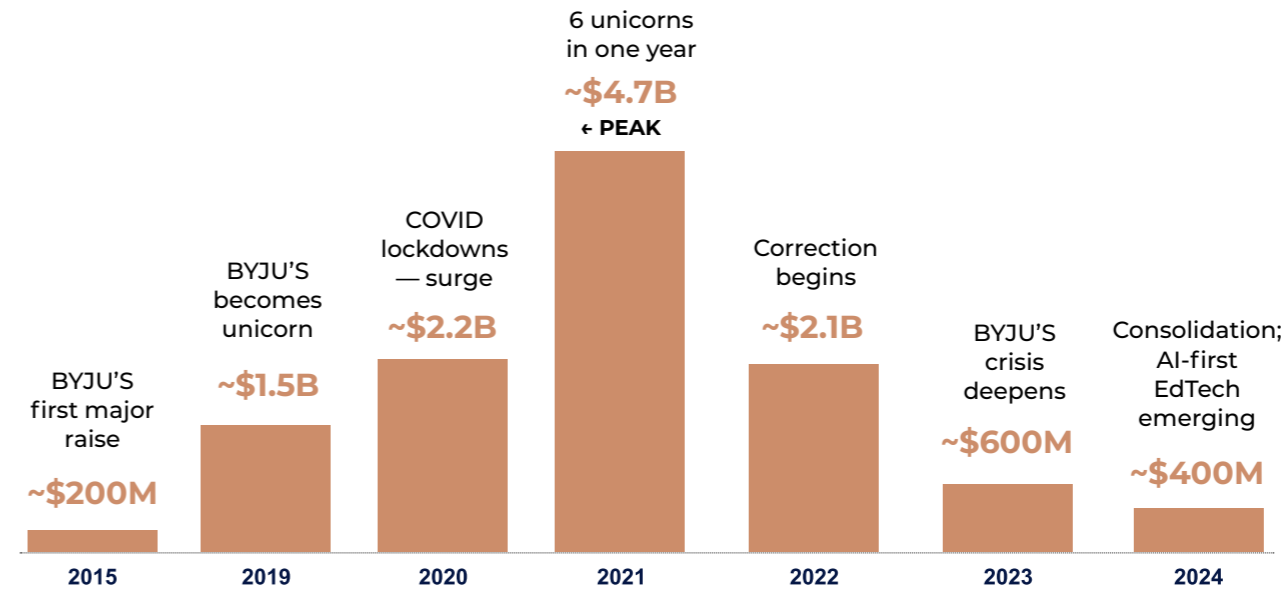
Source: MoE / DIKSHA dashboard

### 4.3 The Pandemic Surge and the Unicorn Boom (2020–2021)

India's schools were closed for 69 weeks — among the longest school closures globally. PM e-Vidya expanded DIKSHA's infrastructure and integrated 200 DTH channels. BYJU'S added 15 million new users in the first months of lockdown. US\$4.1 billion poured into Indian EdTech in 2021 — nearly half of all

global EdTech funding that year. Six unicorns with combined peak valuations exceeding US\$35 billion were created in 18 months. Yet 38% of rural households had no smartphone; only 24% of urban children were studying online regularly. Technology amplified education for those already advantaged while leaving those who needed it most furthest behind.

### Funding Rollercoaster (2015–H1 2025)



Source: Tracxn / Inc42 / company filings.



MARKET 2000

₹500 Cr

CD-ROM era — <3% coverage

MARKET 2023

US\$7.5B

World's 2nd largest EdTech market

MARKET 2030 (PROJ.)

US\$30B

₹2,50,850 Cr — 4× growth in 7 years

FUNDING PEAK

US\$4.1B

2021 — half of all global EdTech VC that year

FUNDING TROUGH

US\$321M

2023 — 87% crash from 2021 peak

DIKSHA

182.3M

Enrolments, 133 languages, 145.7M completions



#### 4.4 The Correction: BYJU'S Collapse and Market Reset (2022–2024)

EdTech funding collapsed from US\$4.1 billion (2021) to US\$321 million (2023) — an 87% crash. Over 100 EdTech startups shut down; approximately 14,000 employees lost jobs. BYJU'S, once the world's most valuable education technology company at a US\$22 billion peak valuation, was by late 2024 functionally insolvent. The unravelling — auditor resignation, ED investigations, 5,000+ layoffs, insolvency proceedings — marked the end of a business built on aggressive sales, unsustainable customer acquisition costs, and acquisitions valued at pandemic-era multiples that the business could never sustain.

#### 4.5 Physics Wallah: The Counter-Narrative

Physics Wallah (PW), founded in 2016 by Alakh Pandey, proved that sustainable EdTech was possible. Courses priced 80–90% below competitors (₹3,000–5,000 per year vs ₹30,000–50,000), no celebrity endorsements, no 10,000-person

#### BYJU'S vs Physics Wallah Comparison Card



METRIC	 <b>BYJU'S</b> The Learning App	 <b>PHYSICS WALLAH</b>
Founded	2011	2020 (company)
Peak valuation	US\$22B	US\$2.8B
2024 status	Insolvency proceedings	Profitable
Model	Premium, B2C, heavy marketing	Affordable, content-first
Avg course fee	₹50,000–₹1,00,000 / yr	₹5,000–₹15,000 / yr
Revenue (FY23)	₹5,298 Cr (reported)	₹1,940 Cr (2023)
Profitability	Losses	Profitable from 2023

Source: Company filings / media reports.

Physics Wallah digital channel launched in 2016; company incorporated in 2020

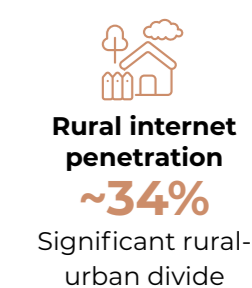
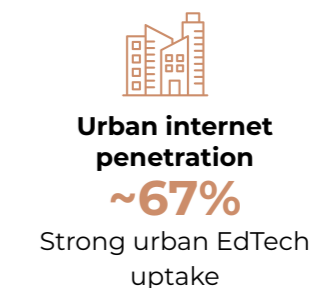
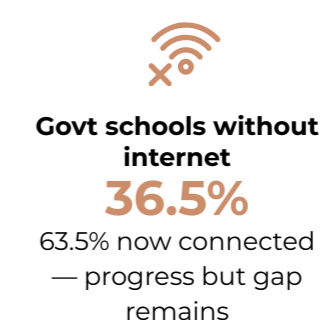
sales force, and a focus on profitability from inception. By September 2024, PW reported revenues of ₹2,015 crore in FY24 (160.7% growth). Its November 2025 IPO listed successfully — one of the strongest new-age tech debuts of the year.



DIMENSION	 <b>BYJU'S</b> The Learning App	 <b>PHYSICS WALLAH</b>
Peak Valuation	US\$ 22 billion (2022)	US\$ 2.8 billion (2024)
Funding Raised	US\$5B+ from 50+ investors	US\$210M (Series B)
Course Pricing	Premium ₹30,000–50,000/yr	Affordable ₹3,000–5,000/yr
Target Market	Urban English-medium	Hindi-medium Tier-2/3 cities
Profitability	Never achieved	EBITDA profitable
Outcome (2024)	Insolvency; "worth nothing"	Rs3,480 Cr vs successful market listing
Lesson	Scale at all costs destroys value	Discipline + authenticity = durability



#### Digital Divide Snapshot





## From Scale to Capability: Rethinking India's Education Journey for the Next 25 Years

**Rajendra Pawar**

Founder, NIIT University and  
Chairman, NIIT Group

A quarter century ago, India set out to educate at unprecedented scale. In 2001, total enrolment in higher education stood at roughly 84 lakh. Today, that figure has expanded to nearly 4.33 crore. Few countries have attempted growth at this speed, and even fewer have done so while carrying the aspirations of millions of first-generation learners. Yet India's education transformation has been marked as much by scale as by unresolved questions of quality, affordability, and employability.

One of the enduring gaps has been public investment. The Kothari Commission's recommendation that India spend 6% of

GDP on education remains unrealised decades later. The resulting capacity shortfall accelerated the growth of private institutions, expanding access but also increasing variability in quality and cost. Professional education, particularly engineering, became significantly more expensive, forcing families to weigh educational investment against uncertain employment outcomes.

Engineering education best illustrates this paradox. India expanded engineering capacity from roughly 90,000 seats in the early 1990s to nearly 17 lakh seats by 2014. But as concerns around employability and quality intensified, capacity declined

to 12.5 lakh by 2021 before recovering again to nearly 16 lakh in 2025, largely driven by demand for Computer Science and Artificial Intelligence programmes. Expansion came rapidly; quality improvements were far less consistent. Current industry estimates place overall graduate employability at around 55%, underscoring the gap between degrees awarded and industry readiness.

Recent reforms by All India Council for Technical Education, including Project PRACTICE and the Research Internship Portal, signal recognition of this challenge. But policy alone cannot transform outcomes. Institutions themselves must

**“India built an IT workforce of 5 million people in 25 years. The question is not whether we can do it again. The question is whether we will move fast enough.”**

redesign learning around real capability development rather than credential accumulation.

The labour market has already shifted. The older “hire and train” model, where companies absorbed graduates and completed their professional preparation internally, is steadily giving way to a “skill and hire” approach. Employers increasingly expect graduates to demonstrate applied capabilities from day one — not merely theoretical familiarity, but evidence of problem-solving, collaboration, and execution.

This is precisely why engineering education must evolve beyond examination performance. Strong institutions are not defined only by placements or infrastructure; they are defined by their ability to teach students how to think structurally, work across disciplines, and solve problems under constraints. Those abilities increasingly determine employability in sectors shaped by automation, AI, and rapid technological change.

Artificial intelligence further intensifies this shift. Generative AI has made access

to information easier than ever, but it has not reduced the importance of judgement, curiosity, or foundational understanding. Students who rely entirely on AI tools without building conceptual depth risk becoming dependent on systems they do not fully understand. The real challenge for education over the next decade will therefore be preserving human capability — synthesis, creativity, intent, and critical reasoning — alongside technological fluency.

The National Education Policy 2020 acknowledged many of these realities through its emphasis on multidisciplinary learning, industry integration, research orientation, and flexibility. But the deeper transformation lies not in terminology, but in implementation. At NIIT University, this philosophy was reflected through four core principles: industry-linked, technology-based, research-driven, and seamless education. The central idea is simple — students should engage with real industry, real research, and interdisciplinary problem-solving throughout their academic journey, not only at its margins.

The next phase of India's education

journey will therefore not be judged by enrolment numbers alone. It will be judged by whether graduates possess the adaptability and capability to succeed in a rapidly changing economy. India now possesses demographic strength, digital infrastructure, and growing global relevance. If the country can align scale with quality, skill with judgement, and public ambition with institutional accountability, it can build not only a workforce, but a globally competitive knowledge economy shaped by distinctly Indian innovation and intelligence.

**Expert  
Insight**

**The next phase of India's education journey will not be judged by enrolment numbers alone — it will be judged by whether graduates possess the adaptability and capability to succeed in a rapidly changing economy.**



## Building Billion Minds: India's Next Education Challenge Beyond Expansion

**P Sathyanarayanan**  
Pro-Chancellor and President  
SRM Group of Institutions

Over the last twenty-five years, India's education system has undergone one of the world's largest expansions. From a few hundred universities and colleges at the turn of the millennium, the country today has nearly 1,430 universities and over 49,500 colleges. Higher education participation has risen significantly, with the Gross Enrolment Ratio reaching 28.4% in 2021–22. Education has also moved far beyond metropolitan India, creating opportunities for first-generation learners across smaller towns and emerging regions.

Technology has been central to this change. Affordable internet access and

digital platforms have democratised knowledge in unprecedented ways. Students today can access lectures, research, and global learning resources regardless of geography. Education is no longer confined to physical classrooms; it has become a continuous and accessible process.

Private institutions have played a major role in accelerating this shift. While public institutions laid the foundation of India's higher education system, private universities and colleges expanded capacity with greater agility, industry integration, and interdisciplinary models. Today, nearly 65% of India's colleges are

private unaided institutions, carrying much of the country's enrolment burden without government subsidy. These institutions also helped introduce programmes aligned with emerging sectors such as artificial intelligence, biotechnology, entrepreneurship, and data science.

India's global academic standing has improved steadily alongside this growth. The country's representation in the QS World University Rankings increased from 11 institutions in 2015 to 54 in 2026 — the highest growth among G20 nations during the period. The early global credibility established by the IITs and IIMs is now being complemented by a more ambitious private university sector seeking international competitiveness.

At SRM University Andhra Pradesh, this ambition recently took shape through the establishment of India's first Quantum Reference Facility in Amaravati's Quantum Valley — an example of the frontier infrastructure that globally competitive universities increasingly require.

Yet the next phase of India's educational evolution cannot be driven by expansion

alone. The deeper question is whether the system is creating innovators, researchers, and independent thinkers, or simply producing degree holders at scale. The future must focus on trust, quality, autonomy, and the freedom to learn.

One persistent challenge is the trust deficit surrounding private education. Despite their contribution to national capacity building, private institutions often operate under restrictive regulatory structures governing fees, intake, approvals, and operational flexibility. Institutions are expected to deliver globally competitive outcomes while functioning under financial constraints that make long-term sustainability difficult. The imbalance becomes sharper when foreign universities entering India are offered greater operational flexibility than domestic institutions that have spent decades building the country's higher education base.

This pressure directly affects faculty quality and research culture. Universities are increasingly burdened by compliance requirements, accreditation targets, and ranking pressures while struggling to attract and retain talented educators.

Without sustained investment in faculty development, academic freedom, and institutional support, India cannot build globally competitive research environments.

At SRM, efforts have been made to create a stronger innovation culture. In 2011, students built and launched SRMSat, India's first student-built nanosatellite, in collaboration with ISRO. The project brought together students across twelve engineering disciplines and demonstrated what young learners can achieve when education moves beyond rote learning toward experimentation and problem-solving.

India's educational philosophy must now evolve from exam-centric learning toward learner-centric development. The future economy will reward problem solvers, innovators, creators, and ethical leaders rather than degree holders alone. Universities, industry, and government must therefore work together to create research cultures that encourage curiosity, collaboration, and indigenous innovation.

India already possesses the ingredients: demographic strength, entrepreneurial

energy, digital infrastructure, and aspiration. The next twenty-five years can position the country not only as a supplier of workforce talent, but as a global centre for research, innovation, and knowledge creation. But achieving that vision will require education systems that remain deeply humane — focused not only on careers, but on nurturing thoughtful, capable, and independent minds.

### Expert Insight

**India already possesses the ingredients for what comes next: demographic strength, entrepreneurial energy, digital infrastructure, and aspiration. The question is not whether the country can build a global knowledge economy it is whether institutions will have the autonomy and support to do it.**



## KEY TAKEAWAYS:

# EdTech & Digital Learning (2000-2026)



### 01

Most dramatic sectoral shift in 25 years: from ₹500 crore in 2000 to US\$7.5 billion in 2023. India built one of the world's largest EdTech markets, producing 6 unicorns with peak valuations exceeding US\$35 billion.



### 02

DIKSHA proved government EdTech can operate at population scale: 182.3 million enrolments in 133 languages. No private EdTech platform comes close to this reach or linguistic diversity.



### 03

The Jio revolution (2016) was the single most important catalyst: a 96% data cost reduction enabled the mass-market video learning business model for the first time.



### 04

The pandemic boom was a mirage: US\$4.1 billion in VC funding (2021) was based on pandemic-specific forced adoption, not sustainable demand. The 87% funding crash exposed the business model fragility.



### 05

BYJU'S collapse and Physics Wallah success are the defining case studies: the same market produced opposite outcomes based on unit economics, authenticity, and disciplined capital deployment.



### 06

AI is the next genuine inflection point: adaptive learning, automated assessment, and AI tutoring — not incremental features but foundational shifts — will define the next EdTech era.

SECTION 5

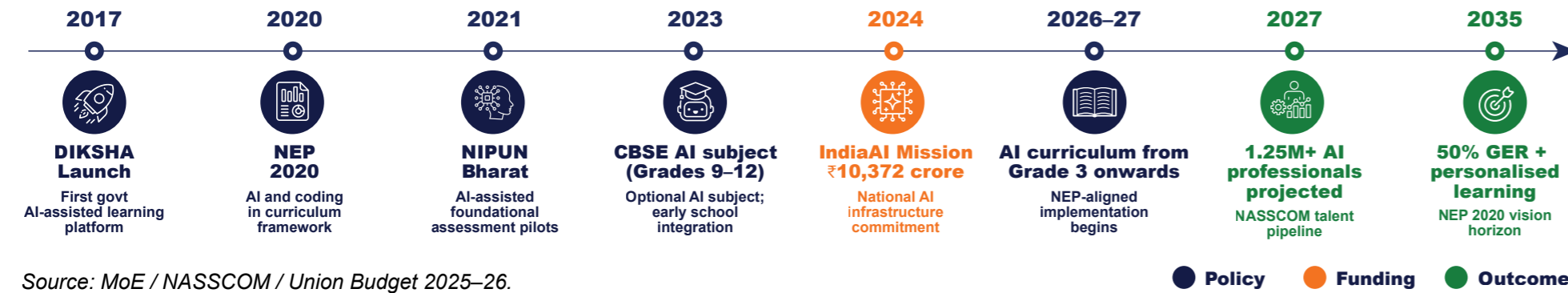
# The Future of Education: Pathways to 2035

The decisions made between 2026 and 2030 will shape India's education system for a generation. A child entering Grade 1 today graduates in 2035. An engineering student enrolling this year will be mid-career. The architecture of transformation is visible: AI integration, flexible degrees, internationalisation, lifelong reskilling,

and a research intensity push through the National Research Foundation. What follows in this section is not speculation — it is extrapolation from policy frameworks, fiscal commitments, and institutional trajectories already in motion. The only variable is urgency.



## AI Integration Roadmap Timeline (2017–2035)



### 5.1 Artificial Intelligence and Adaptive Learning

AI is transitioning from an experimental tool to a foundational layer of India’s education infrastructure. The Centre of Excellence in AI for Education, announced in Union Budget 2025–26 with a ₹500 crore allocation, will serve as the national hub for AI-driven teaching tools, adaptive assessment systems, and personalised learning pathways. CBSE now offers AI as an optional subject from Classes 9–12.

The equity question embedded in AI integration is the most important one the white paper can pose. AI-powered adaptive learning

requires reliable internet, functional devices, and electricity. In 2026, 63.5% of government schools have internet — meaning 36.5% do not. The students most likely to benefit from AI personalisation are those in urban, connected, device-equipped settings — the same students who already benefit from better teachers, more resources, and better-resourced families. If AI integration in education proceeds without deliberate equity guardrails — offline-capable tools, solar-powered devices, teacher training in low-connectivity environments — it risks widening the learning gap it promises to close. The ₹500 crore AI Centre of Excellence will define whether India’s AI education strategy is designed for the top 30% or the full 100%.



**AI CENTRE BUDGET**  
**₹500 Cr**  
 Union Budget 2025–26 allocation

**SWAYAM ENROLMENTS**  
**5.15 Cr**  
 Across 16,530+ courses

**GENAI GROWTH**  
**107% YoY**  
 India’s Coursera enrolments — fastest globally

### 5.2 Internationalisation: From Sending Nation to Global Hub

India is actively repositioning from a nation that exports students to one that attracts them. As of 2026, 19 foreign universities are establishing campuses in India, with the University of Southampton becoming the first to inaugurate under NEP regulations. The ‘Study in India’ programme targets 500,000 international students by 2030 — a tenfold increase from the 50,000

enrolled in 2023. Simultaneously, Institutions of Eminence have been permitted to set up offshore campuses, marking India’s shift from a student-exporting nation to an education exporter.

A note of realism is warranted here. Growing international student enrolment from 50,000 to 500,000 in four years is a tenfold increase that no country has achieved without a combination of active

government incentives, world-class campus experience, internationally recognised degrees, and competitive scholarships. As of 2026, the infrastructure for international student services — accommodation, visa processing, pastoral support, English-medium teaching quality — is nascent at most institutions beyond a handful of elite campuses. The ambition is directionally correct; the execution timeline is optimistic.

Metric	Current (2026)	Target / Direction
Foreign universities setting up India campuses	19*	Growing under NEP UGC regulations
Universities with Offices for International Affairs	179	Expanding across institutions
Institutions offering joint/dual degree programmes	49	UGC Collaboration Regs 2022
International students enrolled in India	~50,000 (2023)	500,000 by 2030
Indian HEIs in QS World Rankings	45	IIT top 3 global target
Indian HEIs in global top 500	11	NRF mandate: scale research output

\* 3 operational; 19 in process under UGC regulations



## Internationalisation Dashboard

INDICATOR	2025 (CURRENT)	2035 TARGET (NEP)	PROGRESS
Inbound international students	~50,000	5,00,000	<div style="width: 10%;"></div> 10%
Foreign university campuses in India	3 (Deakin, Wollongong, UNSW)	20+	<div style="width: 15%;"></div> 15%
Indian HEIs in QS Top 500	12	25+	<div style="width: 48%;"></div> 48%
Indian institutions in QS 2026 total	54	100+	<div style="width: 54%;"></div> 54%
Joint degree programmes	~200	500+	<div style="width: 40%;"></div> 40%

Source: UGC / QS Rankings 2026 / NEP 2020.

### 5.3 Flexible Degrees and the Academic Bank of Credits

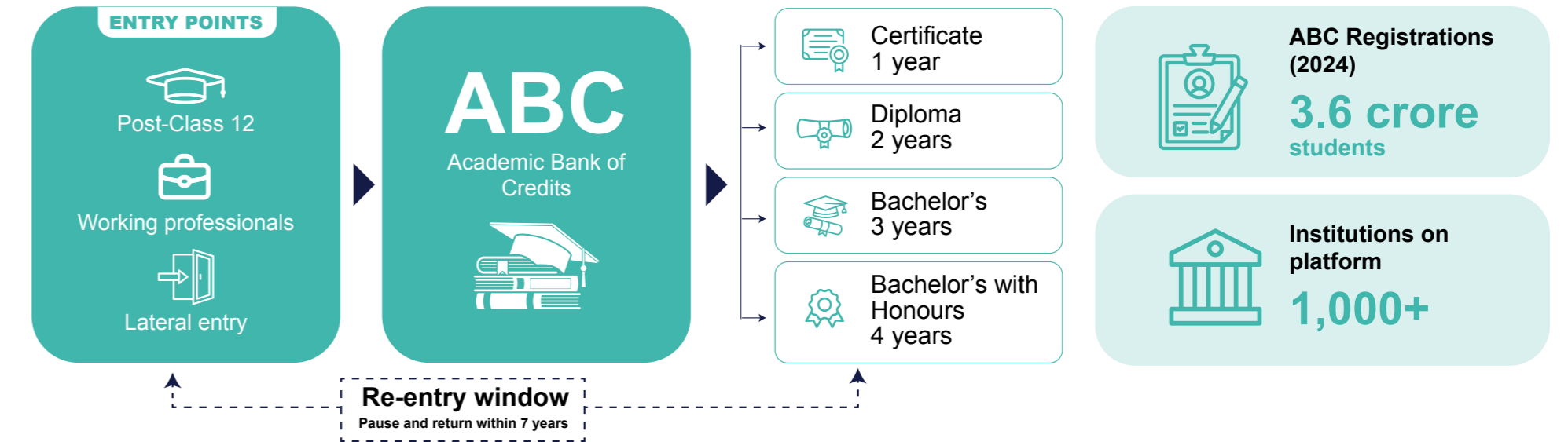
The Academic Bank of Credits (ABC), launched in 2021, is India's sharpest break from the traditional degree model. Students can exit after Year 1 with a certificate, after Year 2 with a diploma, after Year 3 with a bachelor's degree, or after Year 4 with a research-integrated qualification. 153 universities offer multiple entry options; 388 universities permit up to 40% credit transfer from SWAYAM

online courses.

The ABC is genuinely transformative in design. But its rollout pace deserves scrutiny: five years after launch, 153 universities offer multiple entry options out of 1,200+ — roughly 13% coverage. 74 universities offer multiple exit pathways. These are early-adopter numbers, not system-wide adoption. The SWAYAM credit transfer provision — 388 universities permitting up to 40% of credits from

online courses — is more advanced, but employer recognition of non-traditional credentials and credit combinations remains uneven. By 2035, the ABC has the potential to be the default infrastructure for all higher education. Whether that potential is realised depends on whether the remaining 87% of institutions adopt it meaningfully, and whether employers come to trust the non-linear degree pathways it enables.

## Academic Bank of Credits (ABC) Flow Diagram



Source: MoE / UGC.

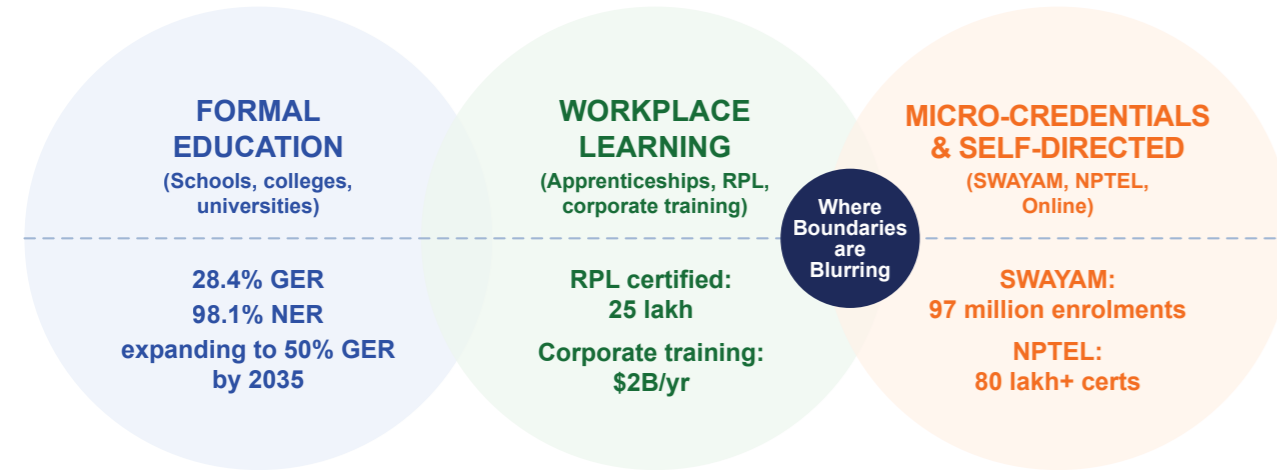
### 5.4 Lifelong Learning and the Reskilling Imperative

The WEF estimates 85 million Indian jobs will be disrupted — by automation by 2030, with 97 million new roles also projected to emerge in the same period. Over 80% of Indian companies plan to reskill employees; 90% are accelerating digitalisation. The Skill India Digital Hub (SIDH) serves as the central platform for upskilling across AI, digital marketing,

coding, and emerging sectors. Coursera's India enrolments in GenAI courses grew 107% year-on-year in 2024 — the fastest rate globally. By 2035, micro-credentials, digital badges, and stackable certificates will become recognised alongside traditional degrees, particularly in fast-moving fields where a four-year curriculum cannot keep pace with industry evolution.



## Lifelong Learning Ecosystem Diagram



Source: MoE / SWAYAM / NPTEL.

### 5.5 New Models of Universities and Digital Institutions

The VBSA Bill 2025 proposes to consolidate UGC, AICTE, and NCTE into a single regulator — the most ambitious regulatory rationalisation in Indian higher education history. Virtual labs (900+ labs, 1,200+ experiments) and the National Digital Library (8 crore+ resources) are enabling hands-on STEM learning without physical infrastructure constraints. The National Research

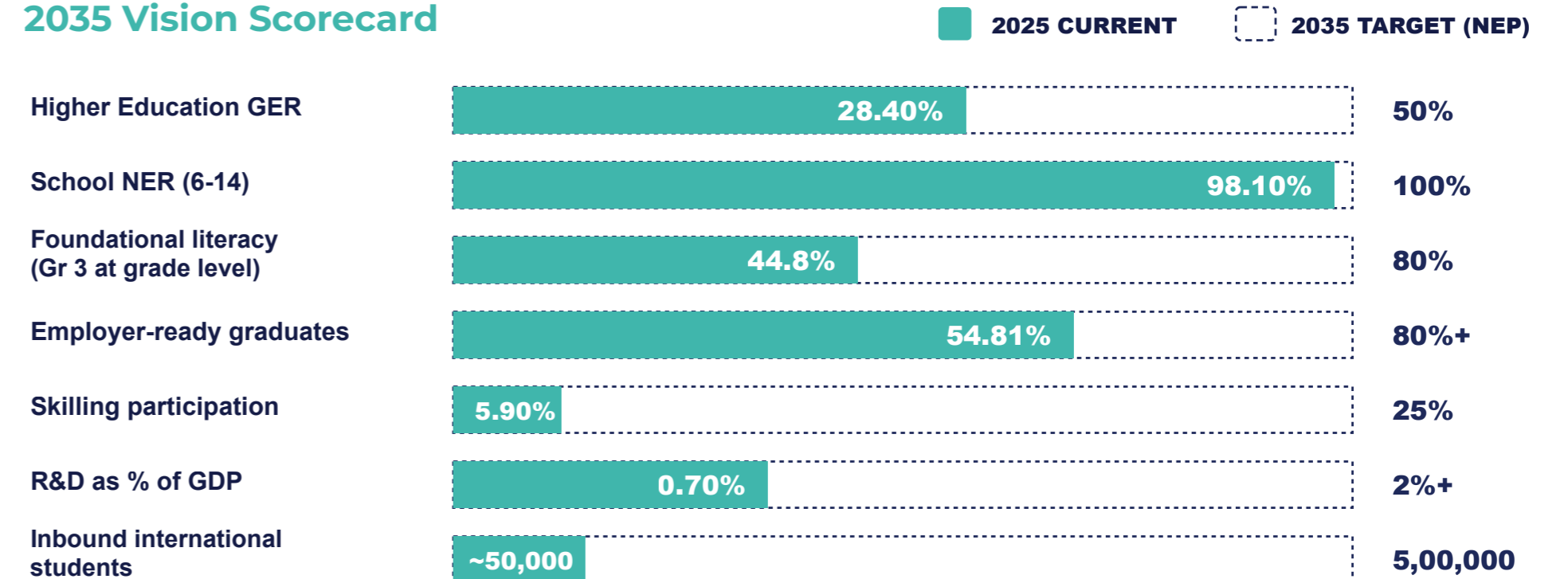
Foundation, with its ₹50,000 crore mandate, is the most significant research policy intervention in a generation — targeting India’s R&D from 0.7% of GDP toward global benchmarks of 2–3%.

The VBSA Bill is India’s third attempt at unified higher education regulation in a decade — the 2018 HECI Bill was withdrawn, a redesigned version circulated without enactment. The arguments

for consolidation are compelling: overlapping jurisdictions, contradictory norms, and an impossible compliance burden for multi-disciplinary institutions. The arguments for caution are equally compelling. VBSA’s proposed structure cannot disburse grants or regulate fees directly — those functions remain with the government. Without financial leverage, it is unclear how the new body enforces its standards on institutions that can simply ignore a regulator it cannot defund. Whether VBSA resolves the fragmentation or reorganises it depends entirely on implementation architecture and the sustained political commitment that previous attempts lacked. Similarly, the NRF’s ₹50,000 crore mandate assumes ₹40,000 crore in private sector contribution over five years — a figure with no precedent in Indian research financing and no binding mechanism to compel it.

Future Indicator	Status (2026)	Target (2030–2035)
GER in Higher Education	28.40%	50% by 2035 (NEP 2020)
International students in India	~50,000	500,000 by 2030
R&D as % of GDP	0.70%	2–3% (NRF mandate)
ABC multi-entry universities	153	All HEIs (NEP mandate)
Vocational training participation	5.90%	Substantial increase required
India global skills ranking	58th	Top 25 target
AI-enabled personalised learning	Pilot stage	Mainstream across all levels

### 2035 Vision Scorecard





## Rethinking Indian Higher Education

**Prof Manindra Agrawal**

Director  
IIT Kanpur

Education is meant to promote critical thinking, creativity, personal growth, informed citizenship, and economic progress. However, education systems must continuously evolve with changing times. Today, the world is being reshaped by rapid technological disruptions, geopolitical shifts, and changing definitions of knowledge and skills. This presents a major opportunity for India to rethink and redefine its higher education system.

Post-Independence, India established several premier institutions, including the IITs, to create a technically skilled workforce for national development. These institutions relied on rigorous

academic standards and strong curricula to produce engineers and professionals needed for a growing economy. While some institutions have sustained excellence, many parts of the broader higher education ecosystem have struggled with declining quality.

Over time, the focus in higher education has shifted from expansion to research and development. Institutions such as the IITs now contribute significantly to innovation and societal problem-solving. However, research output is often measured more by publication volume than by the creation of transformative technologies and practical solutions. Rapid technological change and evolving

geopolitical realities now demand a rethinking of higher education to strengthen India's technological capabilities and support the vision of Viksit Bharat 2047.

School education remains the foundation for critical thinking and specialized learning. Meaningful reforms in higher education cannot happen without addressing shortcomings at the school level. One important area is the need to move beyond the traditional one-size-fits-all classroom model toward more personalized learning systems.

Advances in Artificial Intelligence (AI) and Machine Learning (ML) offer opportunities to improve education through intelligent tutoring systems and AI-based learning support. Such systems can provide individualized guidance, identify strengths and weaknesses, and recommend tailored learning pathways. They can also assist teachers by identifying learning gaps and improving classroom effectiveness.

At the same time, curriculum reforms are essential. Education must integrate emerging technologies while promoting experiential learning, active participation, and independent thinking. Although AI has the potential to transform pedagogy,

excessive dependence on technology should be avoided to ensure students continue to develop analytical and creative abilities.

Another major concern is the current structure of high-stakes examinations such as JEE. These assessments have increasingly become dependent on a coaching ecosystem that often rewards pattern recognition rather than originality, creativity, and reasoning. There is a need to move toward adaptive assessment systems that better evaluate critical thinking, resilience, and problem-solving abilities. Selection systems should focus not merely on eliminating candidates, but on identifying genuine talent and potential.

India must also strengthen its technological sovereignty. For decades, the country has depended heavily on technologies developed elsewhere. Recent global developments have shown that for a country of India's scale, self-reliance in critical technologies is essential. While complete technological independence may not be realistic in every domain, India must build strong capabilities in strategic sectors such as cybersecurity, unmanned systems, quantum technology, AI, semiconductors,

biotechnology, agriculture technology, and space technology.

Achieving this requires deeper collaboration between academia, industry, and government. Critical technologies demand sustained investment, long-term planning, and strong research ecosystems. The government has already initiated several major programmes, including the National Mission on Interdisciplinary Cyber-Physical Systems, IndiaAI Mission, National Quantum Mission, India Semiconductor Mission, and the Research, Development and Innovation Fund under the Anusandhan National Research Foundation (ANRF).

Higher education institutions, especially technical institutions, must evolve from centres of knowledge delivery into hubs of innovation, research, and entrepreneurship. Deep-tech startups emerging from institutions such as the IITs are playing an important role in translating research into practical applications. Institutions provide infrastructure and knowledge, while startups contribute agility, experimentation, and rapid innovation. This ecosystem needs to expand beyond a few leading institutions to create a broader and more distributed innovation

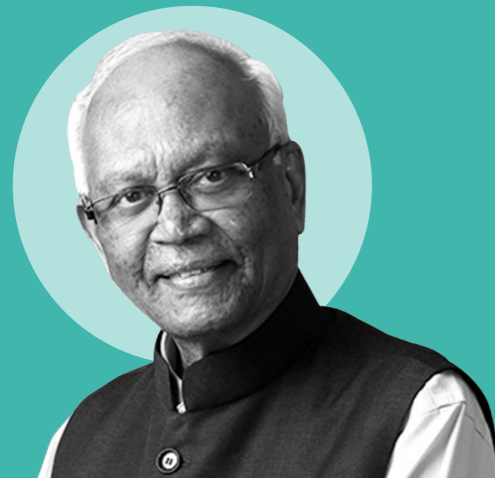
network across the country.

Ultimately, the goal of higher education should shift from producing job seekers to nurturing job creators. This transition will take time, but universities and technical institutions are well-positioned to lead it. Achieving this vision will require stronger partnerships among academia, industry, and government.

As India redefines its global role in the coming decades, education will remain central to shaping the country's capabilities, innovation capacity, and national character.

**Expert  
Insight**

**The goal of higher education should shift from producing job seekers to nurturing job creators. Universities and technical institutions are well-positioned to lead this transition.**



## Evolution of India's Higher Education, Research, and Innovation Landscape

**Dr R A Mashelkar, FRS**

Former Director General  
CSIR

Over the past 25 years, India's higher education, research, and innovation ecosystem has undergone a major transformation in terms of expansion, inclusion, and excellence. The journey reflects a shift from scarcity to scale, from limited access to wider inclusion, and from peripheral participation in global knowledge creation to a more visible international presence. Yet, despite important gains, significant gaps remain in research depth, R&D intensity, and globally impactful innovation.

At the beginning of the century, India's higher education system had limited reach, with opportunities concentrated in a few elite institutions and metropolitan

centres. Structural reforms played an important role in changing this landscape. The 1998 Mashelkar Committee proposal to convert Regional Engineering Colleges into National Institutes of Technology (NITs) marked a major shift in governance, funding, and institutional aspirations, helping create nationally benchmarked technical institutions with greater autonomy and accountability.

Since then, expansion has been substantial. The number of universities has grown from a few hundred to well over a thousand, while the Gross Enrolment Ratio in higher education has nearly tripled from around 10 per cent in the early 2000s.

This growth has also been accompanied by greater inclusion, both geographically and socially. Premier institutions such as IITs, IIMs, IISERs, AIIMS, and NITs expanded across the country, reducing the concentration of quality education in a handful of cities. Social inclusion also improved through measures such as the expansion of seats for 27 per cent OBC reservation without reducing open-category seats, following recommendations of the Moily Committee in 2006.

Female enrolment has increased sharply and is approaching parity in several disciplines, while more students from rural and first-generation backgrounds are entering universities. The system has demonstrated that inclusion and excellence can strengthen each other when implemented thoughtfully.

Institutional diversification has been another defining feature of this period. Private universities have expanded, interdisciplinary institutions have emerged, and the National Education Policy (NEP) 2020 has outlined a vision for multidisciplinary, flexible, and research-oriented universities. Reforms such as the Academic Bank of Credits, multiple entry-exit options, and holistic learning models

indicate a gradual move away from rigid academic silos.

The pandemic accelerated the digital transformation of higher education. Platforms such as SWAYAM and NPTEL expanded access to quality learning resources, while universities adopted blended learning, AI-assisted pedagogy, and flexible evaluation systems. However, pedagogy in many institutions remains examination-centric, and rote learning continues to dominate assessment practices.

India's progress in research output has also been notable. The country is now among the world's largest producers of scientific publications, contributing roughly 5 per cent of global research output. Citation impact and international visibility have improved, while institutions such as IISERs and leading IITs have strengthened India's scientific base and improved global rankings.

However, research quality and depth remain uneven. Only a small proportion of Indian research papers rank among the world's most highly cited, and breakthrough discoveries with global impact remain limited. A major structural challenge continues to be low investment

in research and development. India's R&D expenditure has remained around 0.7 per cent of GDP for decades, with relatively weak private-sector participation compared to leading innovation economies that invest between 2 and 4 per cent of GDP.

Without stronger industry-academia collaboration and greater investment in research, India risks achieving moderate global visibility without true leadership. In this context, the establishment of the Anusandhan National Research Foundation (ANRF) is an important step.

Universities have also begun playing a greater role in translating ideas into innovation through incubators, research parks, and innovation cells. India has emerged as the world's third-largest startup ecosystem, with growth gradually shifting from consumer-focused ventures to deep technologies such as electric mobility, space technology, drones, and digital infrastructure.

India's higher education and innovation ecosystem today is significantly stronger than it was two decades ago. However, the next phase must focus on excellence rather than expansion alone. The priority now is to move from quantity to impact,

from publication counts to breakthrough discoveries, from startup numbers to globally competitive deep-tech enterprises, and from public-dominated research funding to stronger private-sector R&D participation.

India has successfully moved from scarcity to scale. The next challenge is to move from scale to global leadership through sustained investment in research, deeper university-industry integration, pedagogical reform, and a stronger commitment to creating new frontiers of knowledge rather than merely following them.

**Expert  
Insight**

**India has successfully moved from scarcity to scale. The next challenge is to move from scale to global leadership through sustained investment in research and a stronger commitment to creating new frontiers of knowledge.**



## KEY TAKEAWAYS:

# The Future of Education (2026-2035)



### 01

AI is the defining shift: From experimental overlay to foundational infrastructure. ₹500 crore AI Centre of Excellence, AI curriculum from Grade 3 onwards from 2026-27, and DIKSHA's adaptive assessments signal a structural, not incremental, change.



### 02

India is becoming a global education destination: 19 foreign universities setting up campuses; 500,000 international student target by 2030; IITs entering top 200 globally. The transformation from sending nation to destination is underway.



### 03

Flexible degrees are restructuring the learning journey: The Academic Bank of Credits enables modular, portable learning. 153 universities offer multiple entry; 388 allow SWAYAM credit transfer. By 2035 this becomes the norm.



### 04

Lifelong learning is no longer optional: WEF projects 85 million jobs disrupted and 97 million new roles created by 2030. The net is not catastrophic — but the transition requires skills, pathways, and institutions that do not yet exist at scale. Reskilling is a workforce survival imperative, not a personal choice.



### 05

Regulatory rationalisation is overdue: The VBSA Bill 2025 is India's third attempt at a unified higher education regulator. Success depends on implementation architecture and political commitment that has previously proved elusive.



### 06

Research intensity must accelerate: At 0.7% of GDP, India's R&D investment is far below global benchmarks. The NRF's ₹50,000 crore mandate is the most significant research policy commitment in a generation.

SECTION 6

# Survey Insights: The State of Indian Education 2026

April–May 2026 • 20 Questions • 15+ Cities across India

**S**ector mix: Higher Education 57% • School Education 17% • Skill Development 7% • Industry/Corporate 5% • EdTech 5% • Consulting/Research 4% • Government/Policy 2% • Experience profile: 52% with 21+ years • 22% with 11–20 years • 26% with under 10 years. Methodology note: Sample skews toward senior practitioners in

metro cities (Mumbai, NCR, Bangalore account for ~40% of responses) and toward Higher Education (57%). School education, rural practitioners, students, and parents are underrepresented. Findings reflect the views of India's education establishment.



### F1 — Cautious Optimism, Not Celebration

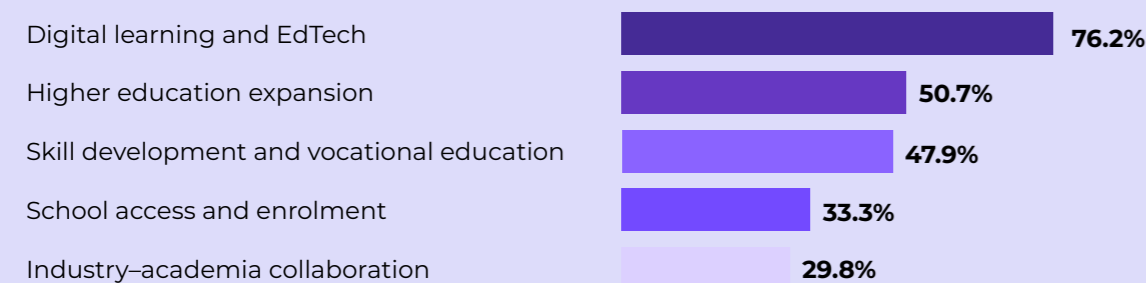
Practitioners are neither despairing nor celebratory about 25 years of progress. The dominant response — “Significant progress with persistent challenges” at 52.8% — captures the sector’s honest, balanced self-assessment. Only 17.0% believe the transformation has been “Transformational.” This finding sets the emotional register of the sector: aspirational enough to work, sceptical enough to hold the system accountable.



**Cross-tab insight:** Government institution respondents are the most cautious: 60.4% chose “Significant with challenges,” compared to 53.7% from private institutions. Industry/Corporate respondents are the most sceptical — 15.8% said “Limited progress.” Those closest to the employer end of the pipeline are least impressed.

### F2 — Digital Learning is the Sector’s Remembered Success

76.2% of respondents chose Digital Learning and EdTech as the area of most progress — the runaway #1 answer, 25 percentage points ahead of Higher Education Expansion. School Access and Enrolment, which the data shows as the defining structural achievement of the 25-year period, ranked 4th at just 33.3%. The sector remembers the digital revolution more vividly than the access revolution — a perception gap this white paper seeks to correct.



## The Sector’s Verdict: Three Numbers That Define the Survey

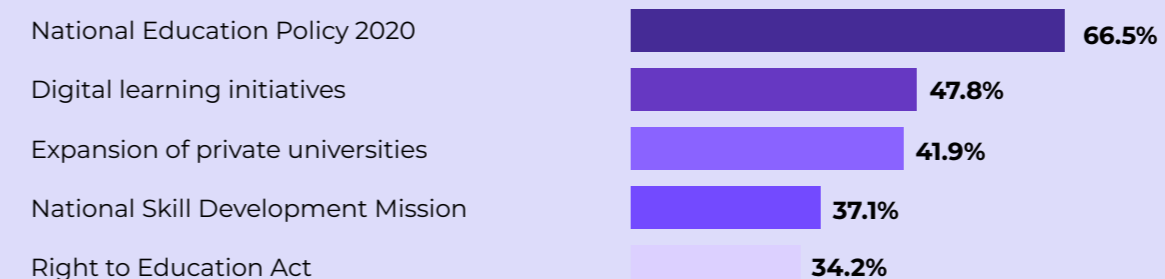
**52.8%**  
**Overall Assessment**  
 “Significant progress with persistent challenges” — the sector’s dominant self-verdict

**8.9%**  
**HE Workforce Readiness**  
 Believe higher education prepares students “Very effectively” for the workforce

**69.1%**  
**Top Barrier**  
 Name curriculum misalignment as the #1 barrier to graduate employability

### F3 — NEP 2020 Dominates the Policy Memory

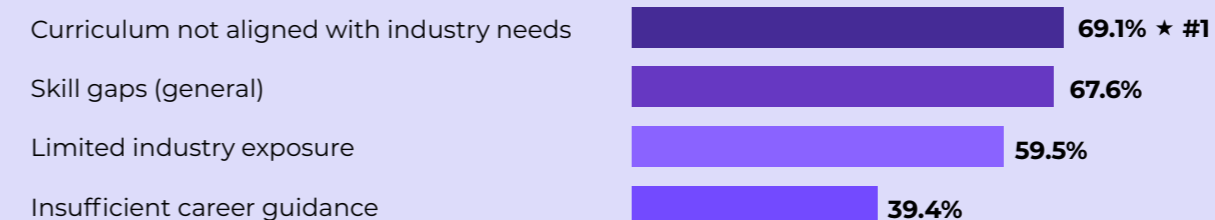
NEP 2020 was named the most significant reform by 66.5% of respondents — nearly double the second-ranked Digital Learning Initiatives (47.8%). The Right to Education Act, which this white paper positions as a landmark constitutional moment, ranked 5th at 34.2%. SSA ranked 6th at 30.1%. The sector’s policy memory is recent and NEP-centred. This context shapes how every reform recommendation in these pages will land with practitioner readers.



### F4 — The Employability Crisis is the Sector’s Defining Anxiety

Three questions, read together, produce the sharpest finding in the survey. The sector does not believe higher education prepares graduates for work (only 8.9% say “Very effectively”). It knows exactly why (69.1% name curriculum misalignment as #1 barrier). And it has a clear view of the first priority: stronger education–industry alignment. This is not analytical inference — it is the sector diagnosing its own failure with unusual candour.

#### Biggest Barriers to Graduate Employability (select up to 3):



**8.9%**  
**Very effectively**



**25.9%**  
**Moderately effectively**



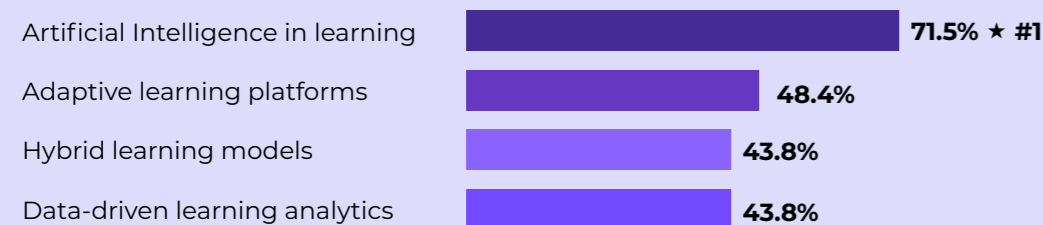
**37.4%**  
**Somewhat effectively**



**27.8%**  
**Not effectively**

## F5 — AI is the Uncontested Technology of the Future

71.5% named AI in learning as the technology most shaping the future — topping the list across every sector surveyed. The 2035 vision most chosen is “Highly technology-driven and personalised” at 32.1%. Notable divergence: EdTech respondents are the most bullish (64.3% see a highly tech-driven 2035) while Higher Education respondents are the most cautious (28.9% — and 22.1% believe the system will be “Largely similar to today”). The people who must implement transformation are the least convinced it will happen.



## F6 — Curriculum–Industry Disconnect is the Consensus Problem

Three separate questions produce the same answer. Whether asked about barriers to employability, critical reforms, or urgent priorities — the curriculum–industry gap leads every time. Biggest barrier to employability: Curriculum misalignment (69.1%). Most critical reform next decade: Stronger industry integration (59.1%), then Curriculum modernisation (58.2%). Most urgent priority: Stronger education–industry alignment (29.4%). This is not one question’s result — it is a consensus signal across four independent survey questions.

## F7 — Teacher Quality is School Education’s Defining Problem

School education respondents diverge sharply from the overall sample. Their #1 urgent priority is teacher training (24.4%), not industry alignment. Their top two school challenges: teacher training and capability (65.9%) and learning outcomes and quality (62.2%) — precisely the pattern the ASER data documents. Infrastructure gaps (41.2%) and digital divide (30.3%) rank lower. The sector’s diagnosis: the hardware problem is being solved; the human and pedagogical problem is the unfinished work.

## F8 — Nearly 1 in 5 Believe Little Will Change by 2035

The most sobering number in the survey. Nearly one in five respondents (19.8%) believe India’s education system will be “Largely similar to today with gradual improvements” by 2035. Among Higher Education respondents — the professionals responsible for implementing NEP 2020’s transformation — this rises to 22.1%. This is institutional memory speaking: enough policy announcements without execution to be sceptical. The 2035 vision with the most votes: “Highly technology-driven and personalised” at 32.1%. The gap between aspiration (32%) and scepticism (20%) is this white paper’s challenge to close.

## Survey Summary: 8 Findings at a Glance

F1 Cautious optimism: 52.8% — “Significant progress with persistent challenges” | F2 Digital learning recalled: 76.2% name EdTech as area of most progress | F3 NEP dominates memory: 66.5% — nearly 2x next reform | F4 Employability crisis: only 8.9% say HE prepares graduates “Very effectively” | F5 AI uncontested: 71.5% name AI as top technology shaping future | F6 Curriculum gap is consensus: 69.1% name misalignment as #1 barrier | F7 Teacher quality defines school challenge: 65.9% name teacher training | F8 Implementation scepticism: 19.8% expect “largely similar” system by 2035

# 10 Big Shifts Shaping India’s Education by 2035

These ten shifts synthesise the core arguments of this white paper, the survey data, and the expert perspectives gathered across five sections. They are not predictions — they are trajectories already in motion, with evidence behind each one. Taken together, they define the education agenda for India’s next decade.



### 01

#### From Access to Achievement

India solved the enrolment problem. The next mission is learning outcomes. NIPUN Bharat, NEP 2020’s competency-based assessment, and ASER’s accountability framework are the tools. The political will to use them at scale is the variable.

### 02

#### AI Moves from Experiment to Infrastructure

The ₹500 crore AI Centre of Excellence, AI curriculum from Grade 3 onwards, and DIKSHA’s adaptive assessments signal a structural shift. AI is no longer an add-on — it is becoming the backbone of how India delivers personalised education at scale.

### 03

#### India Becomes a Global Education Destination

19 foreign universities are establishing campuses. The Study in India target of 500,000 international students by 2030 is a tenfold increase from today. IITs in the global top 200 are the credentialing foundation. The sending nation is becoming a destination.

### 04

#### The Degree Loses its Monopoly

The Academic Bank of Credits, SWAYAM credit transfer, and multiple entry-exit pathways are dismantling the four-year degree as the only legitimate credential. By 2035, micro-credentials, digital badges, and stackable certificates will be recognised alongside traditional degrees.

### 05

#### Employability Becomes a Regulatory Metric

NIRF rankings now include placement data. NAAC 2.0 integrates outcome-based assessment. NEP 2020 mandates industry linkages. The era of the untraceable graduate — no one knows if they got a job — is ending. Accountability for outcomes is arriving at institutional level.

06

**The Skill Half-Life Shrinks to 5 Years**

AI is compressing skill relevance cycles from decades to years. A qualification designed in 2022 may graduate students into a 2027 job market where core assumptions have changed. Lifelong learning is not an aspiration — it is a workforce survival imperative.

09

**Research Intensity Becomes a National Priority**

India's jump from 81st to 39th on the Global Innovation Index in 9 years (WIPO GII 2015–2024) is the early signal. The NRF's ₹50,000 crore mandate, IIT research output growth, and the NEP 2020 research university vision point toward a fundamental shift in India's ambition from teaching-first to research-driven institutions.

07

**EdTech Pivots from Scale to Quality**

The BYJU'S collapse and Physics Wallah success defined the new equation: sustainable unit economics + authentic value delivery + hybrid models. The EdTech companies that grow in the next decade will be those measured by learning outcomes, not user counts.

10

**Equity Becomes the Test of Every Reform**

Bihar at 16% GER vs Chandigarh at 64.8%. Government school Class 5 reading at 44.8% vs private school at 59.3%. AI reskilling reaching the already-skilled while the vulnerable are left behind. Every policy in this white paper — AI integration, the Academic Bank of Credits, GER targets, internationalisation — has an equity question embedded in it. India's education decade will not be judged by its headlines or its averages. It will be judged by what happens to the student in Bihar, the worker in a BPO about to be automated, and the rural girl who got into college but dropped out in Year 2. No reform counts as success if it widens the gaps it was designed to close.

08

**The Public-Private Boundary in Education Blurs**

SWAYAM credit transfer, PPP skilling models, foreign university campuses, and industry-integrated curricula are dissolving the clean line between public and private education. The future is a hybrid model, not a binary choice.

# India's Education Decade Ahead

Twenty-five years of Indian education produce a clear-eyed assessment: the country has achieved extraordinary things at extraordinary scale, and it has paid a price for that scale — in quality shortfalls, structural misalignments, and persistent inequities that growth alone cannot resolve.

**India solved scale. The next decade will determine whether it solves substance.**

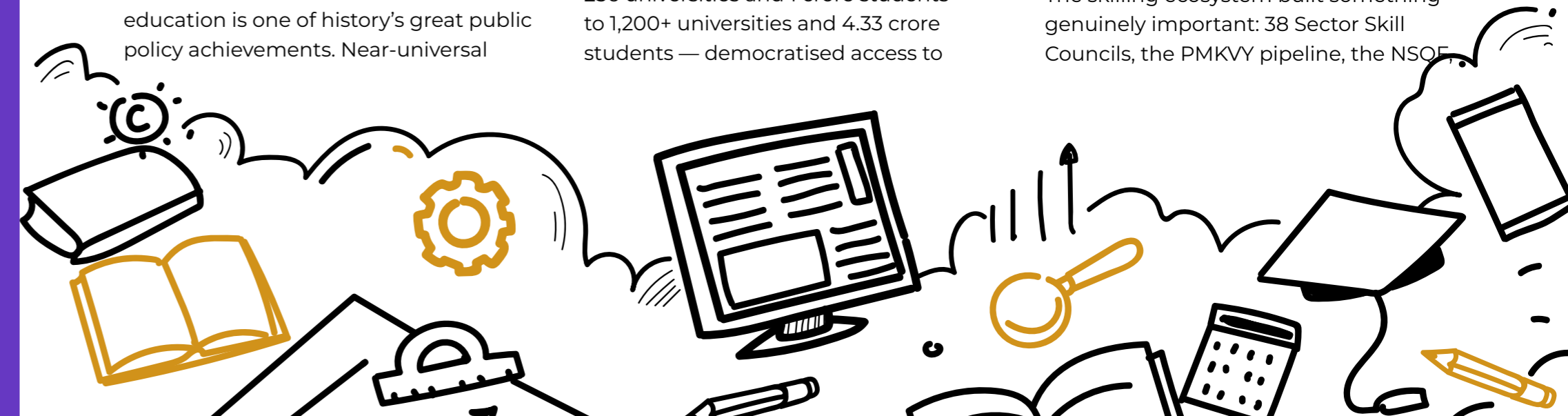
The access revolution in school education is one of history's great public policy achievements. Near-universal

enrolment. Gender parity at every level. A constitutional right to education. DIKSHA reaching 182 million learners in 133 languages. These are real, durable gains that will compound over generations. The learning crisis that sits alongside them is not an argument against what was achieved, but an honest accounting of what was not.

The higher education expansion — from 256 universities and 1 crore students to 1,200+ universities and 4.33 crore students — democratised access to

credentials at unprecedented scale. Its cost has been a quality distribution so wide that the credential system itself becomes unreliable as a signal of competence. The 45% employability gap is not a peripheral problem. It is the central indictment of a system that expanded enrolment without building the quality assurance architecture that makes enrolment meaningful.

The skilling ecosystem built something genuinely important: 38 Sector Skill Councils, the PMKVY pipeline, the NSOF



and raised formal vocational training participation from 2% to 5.9% of the working-age population. Its unfinished work is matching the skills delivered to the skills required — a challenge that was difficult when the economy changed slowly and is near-impossible with AI reshaping job architectures faster than any training curriculum can adapt.

EdTech’s story — boom, overcorrection, tentative reinvention — is the most compressed version of the broader pattern. The pandemic proved digital infrastructure can reach populations at a scale commercial platforms alone could never achieve. The correction proved technology cannot substitute for accountability and sustainable economics. The AI chapter now beginning may finally deliver the adaptive personalisation EdTech has always promised.

Running beneath all five of these stories is an equity thread that aggregate numbers obscure. Bihar’s higher education GER of 16% against Chandigarh’s 64.8%. Government school students at 44.8% foundational literacy against private school students at 59.3%.

SC/ST students underrepresented at the doctoral level despite 25 years of reservation policy. Rural households without smartphones unable to participate in a digital learning revolution designed for the connected. Workers most vulnerable to AI-driven job restructuring least equipped to access the reskilling platforms designed to help

them. Every transformation documented in this white paper has an equity shadow — a version of the same story playing out worse for those who were already behind. India’s education decade will not be judged by its average outcomes. It will be judged by whether it narrows or widens these gaps.

**The 2035 Vision: A Scorecard for the Decade**

Dimension	Where India Stands (2026)	What 2035 Requires
School Learning Outcomes	44.8% govt school Class 5 reading at grade level (ASER 2024; 59.3% private schools; down from 56.2% in 2008)	80%+ foundational literacy across all schools
Higher Education Access (GER)	28.40%	50% (NEP 2020 mandate)
Graduate Employability	54.81% job-ready	80%+ employer-ready graduates
Vocational Training Participation	5.9% of workforce	25%+ with relevant, current skills
AI Integration in Education	Pilot / early deployment	Mainstream across all levels and geographies
International Students in India	~50,000	500,000 (Study in India target)
Research Expenditure (% GDP)	0.70%	2–3% (NRF mandate)
Education Financing (% GDP)	3.9–4.6% (fell to 3.1% in 2021–22)	6% (Kothari Commission target, reiterated NEP 2020)

**A Call to the Sector**

This white paper is addressed to policymakers, institutional leaders, investors, educators, and every stakeholder in India’s education ecosystem. The data in these pages documents both the achievement and the deficit. The next chapter is not written yet.

For policymakers: the 6% of GDP financing target has been recommended since 1966. Reiteration without a fiscal roadmap is not a policy. The VBSA Bill’s regulatory rationalisation and the NRF’s research mandate are the right instruments — implementation is the test.

For institutional leaders: accreditation, NIRF ranking, and NEP 2020’s outcome frameworks are creating transparency that was previously absent. Institutions that build genuine quality — measured in learning outcomes and employment rates, not just enrolment numbers — will define the next era.

For EdTech companies and skilling providers: the Physics Wallah model is the template. Authentic value. Sustainable economics. Hybrid delivery.

AI-augmented personalisation. The companies and programmes that measure success by learner outcomes — not user counts or training certificates — will earn the trust and scale their impact.

For investors and industry: the skills pipeline that feeds India’s economy is a shared infrastructure. The employability gap is not just an education problem — it is a productivity problem. Industry investment in curriculum co-design, apprenticeship pathways, and faculty development is not philanthropy. It is supply chain management.



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