



## State Universities to be hubs of Skill-Based Education

**For Prelims:** State Universities to be hubs for Skill-Based Education, [National Education Policy \(NEP\) 2020](#), [Science, Technology, Engineering and Mathematics \(STEM\)](#), [IoEs \(Institutions of Excellence\)](#).

**For Mains:** State Universities to be hubs for Skill-Based Education.

[Source: TH](#)

### Why in News?

The [National Education Policy \(NEP\) 2020](#) in India has been hailed for its emphasis on skill-based education and practical learning.

- However, despite a large number of science graduates, there is a disconnect between the education provided and industry requirements.

### What is the Scenario of Higher Education in India for STEM?

- Among 1,113 Indian universities, 422 are public and managed by **State governments**, each with several State-affiliated colleges catering to a large share of enrolments.
  - These universities play a **crucial role in preparing graduates for the scientific workforce**.
- Among Science, Technology, Engineering, and Mathematics (STEM) graduates, the aggregate **enrolment of students in BSc courses is close to 50 lakh**, with more than 11 lakh students completing their bachelor's degrees every year, as per the **All-India Survey of Higher Education Report 2021-2022**.
- However, the number of science graduates drops to 2.9 lakh at the masters level (25% of BSc graduates), and even further at the doctoral level, with **only 6,000 science PhDs awarded each year**.
  - A PhD, or a master's degree with select eligibility tests, is a prerequisite to entry-level scientific research or teaching positions at universities and national institutes.
- Given this, **a large number of bachelors-equivalent science graduates in India - some 8 lakh a year** - represents the human resources entering the workforce immediately or in the near future.
- The majority of bachelors-level science graduates in India earn **their primary degrees at State-affiliated colleges and universities**.

### What are the Issues Related to State Affiliated Universities for Higher Education?

- **Outdated Curriculum:** Many State-affiliated institutions offer curricula and course content that are **outdated and not in line with contemporary technologies** and advancements. This

hampers the students' ability to acquire relevant and up-to-date knowledge and skills.

- **Lack of Practical Training:** Science courses **often lack sufficient practical training opportunities**, and laboratory facilities are often inadequate or poorly maintained. This limits students' hands-on experience and practical skills development, which are crucial for scientific careers.
- **Limited Research Focus:** State-affiliated institutions **face resource constraints and often lack the research-intensive environment** found in [Institutes of Eminence](#) and private universities. This hampers research opportunities for students and faculty, hindering their ability to contribute to scientific advancements.
- **Existential Crisis:** These institutions struggle to find **their unique role in higher science education**. Unlike **IoEs (Institutes of Excellence)** or private universities, State-affiliated colleges cater to a larger number of students but may lack the resources to meet research metrics. Balancing the teaching **role with the need for research and upskilling poses a challenge**.
- **Employability Gap:** Despite a large pool of science graduates, **industries report a lack of individuals trained with** relevant skills. This indicates a mismatch between the skills imparted by State-affiliated institutions and the demands of the job market.

## How can State Universities be Turned into Skill-Based Education Hubs?

- **Aligning Curriculum with Industry Needs:**
  - Revamp BSc and integrated course curricula to focus on industry-relevant skills and certifications, including programming, data analysis, instrumentation, quality assurance, and benchmarking.
- **Industry Collaborations:**
  - Forge long-term collaborations with industries through seminars, expert interactions, apprenticeships, job fairs, and funding support to provide real-world exposure and enhance practical training.
- **Incorporating Job Application Skills:**
  - Enhance course-training by teaching job application skills, including applying for positions, interviewing techniques, and salary negotiation, to ensure graduates are job-ready.
- **Adopting International Models:**
  - Draw inspiration from U.S. and European community college and technical university models that prioritize regional education and workforce readiness.
- **Bridging Policy Objectives:**
  - State-affiliated institutions can address India's need for skilled scientific personnel and graduate-level employability challenges, aligning with the National Education Policy and proposed National Research Foundation.

## Conclusion

- Transforming State-affiliated universities into **skill-based science education centers can bridge the gap between science education and industry requirements**, ensuring graduates are better prepared for the workforce. This aligns with the broader goals of the NEP and enhances the country's scientific capabilities.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

**Q1.** How have digital initiatives in India contributed to the functioning of the education system in the country? Elaborate on your answer. **(2020)**

**Q2.** Discuss the main objectives of Population Education and point out the measures to achieve them in India in detail. **(2021)**

