



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- **Outdated Curriculum:** Many State-affiliated institutions offer curricula and course content that are **outdated and not in line with contemporary technologies** and advancements.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

