# Education Ecosystem for the 4th Industrial Revolution

## What is the issue?

- The government is putting in place an education ecosystem to boost advanced learning in new-age technologies.
- With the Fourth Industrial Revolution (IR) in the making, it is essential that India's higher education sector capitalise on this.

## What is the 4th IR about?

- The Third Industrial Revolution was of personal computers and internet.
- The next wave of global progress and growth is being driven by the Fourth Industrial Revolution.
- This involves the emerging technologies that merge together to change the dynamics of how industries operate.
- These include artificial intelligence, machine learning, Internet of Things (IoT), 3D printing, biotechnology and 5G.

## What is the challenge before India?

- India has the world's largest population of young people.
- In any case, India needs more jobs for its 50-crore youth that will be in the labour market by 2030.
- To capitalise on the Fourth Industrial Revolution, India has to align the higher education sector with the demands of the new age.
- But India already faces structural and regulatory challenges in the higher education sector.
- So the path to create a market for higher education in emerging technologies has multiple limitations ahead.
- Some of the biggest obstacles include the inadequacy of curriculum and trained faculty since the technology itself is evolving rapidly.
- So, the only way for students to gain knowledge in emerging technologies is to learn directly from an industry practitioner or join online resources.
- The groundwork to gravitate the youth towards a career in such technologies has already been laid by the government.

## What are the government initiatives in this regard?

- There are three pillars that have been created for the needed structural

change.

- **Autonomy** - The Graded Autonomy status was granted by the University Grants Commission (UGC).
- This has given the freedom to higher education institutions to launch new courses, off-campus centres, skill development courses, and foster other academic collaborations with industry.
- So new-age courses in emerging technologies can be easily launched by universities without being delayed by the regulator's approval.
- **Ranking** - India's academic institutes largely lack a performance-based public ranking system.
- The gap is set to be filled after the Human Resource Development Ministry launched the Atal Ranking of Institutions on Innovation and Achievements (ARIIA).
- Under this, by April 2019, over 800 higher education institutes will be ranked on parameters related to innovation and entrepreneurship development.
- E.g. universities facilitating students to launch market-ready products, launch start-ups etc., through new courses, will be highly rewarded under the rankings
- **Technical education** - The All India Council for Technical Education (AICTE) has reduced the minimum credits needed for a degree from 180 to 160.
- This effectively reduces a full semester of academic load for students and faculty.
- The AICTE also formulated the National Student Start-up Policy.
- This enables bright students to take up courses in emerging technologies.
- They can learn practical engineering skills by working on prototypes and gain a "minor degree".
- If the student continues to build the prototype into a start-up, the knowledge and experience acquired by the entrepreneur will be recognised as an MBA in Entrepreneurship Programme.
- This is possible under the new AICTE guidelines.

## What do these initiatives imply?

- The interlinking of these there pillars will let the institutes adopt new technology courses (elective and minor) with industry partnerships.
- The potential students will gravitate towards these institutions, which have higher flexibility and a modern outlook to the industry.
- These students will acquire better skills and drive up new job openings in emerging technologies.
- They could build up a new generation of products and start-ups from India.

## What lies before India?

- The advent of the fourth industrial revolution is already being seen as transforming skill-based sectors in developed countries.
- It is facilitating increased investments in Research and Development (R&D) measures in countries like US, China and Japan.
- In such a scenario, India needs to catch up with the anticipated changes in its own labour market.
- The need of the hour is a plan of action to create a model for higher education that addresses these shifts.

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