Thematic Session: I

Importance of Sustainability in Education Curriculum, Job Prospects, Industry-Academia Collaboration

Time: 11.00 AM – 12.30 PM
Venue: Exhibition Hall (Upper), Manekshaw Centre, New Delhi

The session on *"Importance of Sustainability into Educational Curriculum, Job Prospects, and Industry-Academia Collaboration"* delved into the implications of sustainability education on job prospects and the crucial role of industry-academia collaboration in fostering a sustainable future.

Name of the panelists

(i) Prof. M. Jagadesh Kumar, Chairman, University Grants Commission (Moderator)
(ii) Prof Rangan Banerjee, Director, Indian Institute of Technology Delhi (Panellist & Keynote Speaker)
(iii) Shri Vikas Rastogi, Pr. Secretary, Higher Education, Maharashtra (Panellist)
(iv) Prof. T. G. Sitharam, Chairman, All India Council for Technical Education (Panellist)
(v) Shri P. M. Prasad, CMD, Coal India Limited (Panellist)
(vi) Prof. Neelima Gupta, Vice Chancellor, Dr. Harisingh Gaur Vishwavidyalaya, Sagar (Panellist)

Key discussion points and actionable recommendations for the way forward are presented below in detail.

a) Key discussion points

The eminent speakers highlighted several key concerns, which included:

(i) The prevailing isolation of academia from industry and broader societal concerns has resulted in educational programs frequently needing more relevance to real-world needs and demands. This non-alignment stems from the limited interaction and collaboration between these key stakeholders, hindering curricula development that effectively addresses society and industry's complex challenges.
(ii) The National Education Policy 2020 (NEP 2020) promote closer collaboration between academia and industry, empowering students with practical skills applicable to real-world industrial challenges. Through increased interaction with industry professionals, students are better prepared to make informed decisions regarding goods and services, effectively addressing operational complexities. This integration of academic and industrial insights cultivates a workforce capable of tackling diverse challenges in a dynamic global landscape.

(iii) Alongside fostering industry-academia collaboration, there's a growing need to emphasise innovation, start-ups, and new business models in education, which can be achieved by incorporating entrepreneurial concepts into curricula and encouraging creative problem-solving among students.

(iv) A deeper collaboration between industry and academia at all levels of Higher Education Institutions is vital. By jointly addressing industry-specific challenges, targeted training programs can be developed to equip students with skills directly applicable to real-world scenarios.

(v) India's rapidly growing working-age population requires a coordinated effort to ensure meaningful employment opportunities. Policymakers, educators, and industry leaders must collaborate to bridge the gap between the supply of skilled individuals and the demand for their expertise. It involves creating job-friendly policies, tailoring education to industry needs, and actively engaging in skill development initiatives. Only through this united approach can India fully capitalise on its demographic dividend.

(vi) Successful collaboration between academia and industry can manifest in various ways, from industry-led initiatives to joint value creation. However, only some approaches guarantee success. A comprehensive strategy integrating multiple models is essential to achieve optimal outcomes. Partial or fragmented efforts may need to fully address the complex challenges and opportunities at the intersection of education and industry.

(vii) We have built a future we want where everyone is happy and healthy and contributes to society's development. As the world population grows, individuals will like to access clean and cheap energy in the food and water sectors, access to good education, etc. Human activities have constantly exploited nature to achieve economic goals, which has caused severe environmental degradation and damage to biodiversity.

(viii) Major concerns today, such as climate change and greenhouse gases, significantly impact human lives. The stable temperatures experienced in the Holocene have now changed into the situation of the Anthropocene due to changes caused by human acts.

(ix) The use of coal and other non-renewable means of energy, along with different gases, is leading to changes in climate, and rising temperatures are a classic case of the tragedy of joint impact felt on the globe.

(x) The future of jobs lies in the sustainability sphere, as per a recent report of the World Economic Forum.

(xi) Smaller countries have been able to keep their rivers clean, but India still needs to implement critical acts such as the Forests Rights Act and Environment Act. Thus, the effect of such policies will take time to be fully implemented as consciousness grows eventually.

(xii) Business responsibility for sustainable practices is slowly becoming an essential aspect of the business world, but it is becoming a critical element in all business discourses.

(xiii) Over the years, deforestation has occurred due to individual and commercial factors. Policies that target sustainability in businesses and education will eventually address the concern of sustainability.

(xiv) A critical concern in an increasingly unsustainable world is the potential for an academic-industry linkage that incorporates engagement with communities to address their immediate needs.

(xv) The rising concern centres around the necessity for increased student job opportunities, attributed to their insufficient preparedness for the professional world. To tackle this issue, fostering more collaboration with the industry is imperative to jointly develop programs that improve students' employability and support sustainability efforts.

(xvi) Indian scriptures mention living in harmony with nature as an integral part of living. Government of India, being a party to the Paris Convention, has been working very actively towards the promises of the Paris Convention, such as creating carbon sinks, changing energy sources to cleaner options, and others. There has been an active focus on using cleaner energy in the electricity sector, transportation sector, building green infrastructure, etc.

b) Suggested Way forward

The following way forward was discussed during the session:

(i) Build a balance between the desire to grow the economy and society and live in harmony with nature. Sustainability in living every day should become central to life.

(ii) The introduction of sustainability concepts should be inculcated from childhood through the school curriculum and higher education institutions so that the ideas are ingrained in life and reflected in everyday life activities.

(iii) There is need to access job opportunities for curricular changes, introduce new specialised courses on sustainability, minor courses on subjects such as energy, climate change, and water sustainability needs to be introduced, and competitions like hackathons and student challenges need to be organised on campus, initiatives for green campuses, innovative campaigns, as well as competitions like Solar Decathlon India, a student competition for net-zero buildings, ideas for life etc, need to be promoted in campuses.

(iv) The research environment for innovations and incubations of start-ups focussing on innovative sustainable enterprises need to be promoted, which can also act as incubation centres for sustainability products. An initiative should be to re-train the workforce to use innovative, sustainable materials. For example, IIT Delhi's use of limestone clay as cement is an innovation that could be implemented in the cement industry.

(v) Incorporation of Artificial Intelligence (AI) for better forecasting, demand response & management, optimal operating strategies & control, optimal scheduling of renewable storage, designer materials and eco-designs are skill sets required for a sustainable future. Redesign the products for energy efficiency, climate adaptation and resilience, and modify behaviour patterns such as promoting work from home, restricting travel, etc.

(vi) Look into partnerships between academia and industry to collaboratively work to make the industry more sustainable, flexible curriculum and use youth-led stewardship to drive and own programs that bring about sustainable development.

(vii) There is an urgent need for a symbiotic relationship between academia and industry; Institutes like AICTE and NCTE have introduced courses on the skilled workforce in clean, green and sustainable energy domains. AICTE is creating and promoting net-zero campuses. So far, there are 75 such campuses.

(viii) Data analysis reveals that the top twenty jobs in the market today are related to sustainability, such as sustainability analysts and managers. Hence, sustainability should not be taught in silos but rather it should be effectuated in every subject/ discipline. Thus, the one-way approach of the education system towards sustainability will need to change.

(ix) Responsible businesses need to be promoted, such as transporting coal using conveyor belts, not trucks, which are known to cut down emissions. Plantation in previously mined areas should be part of the practice of business responsibility.

(x) Sustainability has been part of India's ancient knowledge system. This idea needs to be reinforced in education from early childhood. We must be fully aware of what is happening to remain sustainable.

(xi) Right from school, the idea of sustainability should be introduced. Social sciences should be introduced in science domains for better-educated community building.

(xii) Community programmes should train our students to become community-friendly individuals. Bhartiya Gyan as part of core courses. Unnat Bharat Abhiyan is being undertaken in all institutions where valuable reports and projects giving suggestions on the role of higher education in community outreach are being emphasised.

Rapporteur

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