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## A CRYSTALLISED REVIEW ON ROLE OF TECHNICAL HIGHER EDUCATION UNDER THE TENETS OF NEW EDUCATION POLICY

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**Abstract—** Since education leads to economic and social change, a well-defined and futuristic education policy is important for a country at school and college levels. By considering tradition and culture, different countries adopt different education systems and adopt different stages during their life cycle at the level of school and college education to make it successful. The Government of India recently announced its new Education Policy, based on the recommendations of an expert committee chaired by Dr. Kasturirangan, former president of the Indian Space Research Organization (ISRO). This paper presents and illustrates the effects of the NEP on higher technical education and provides recommendations for successful policy implementation.

**Key Words:** NEP, Government of India, ISRO, Higher education.

### INTRODUCTION

In India, higher technical education has never been as critical as a means of social mobility, a catalyst of economic growth and a defender of democracy. We need continued creativity that will drive us toward expanded access, affordability and equality in order for higher education to fulfil its promise as a great equalizer. This innovation would create an environment that will provide a number of options appropriate for the various needs of students for a variety of high-quality educational experiences and qualifications with marketplace value.

The technical and managerial education sector has made a major contribution to the economic and industrial growth of the country. It has

produced professional, technical and managerial manpower of high quality. The Indian Institutes of Technology (IITs), Indian Institutes of Management (IIMs) and 17 Regional Engineering Colleges provide technical / management education (RECs). Other central sector institutions include: Indian Institute of Science (IISc), Bangalore, Indian Institute of Information Technology and Management (IITM), Gwalior, Indian Institute of Information Technology (IIIT), Allahabad, Indian School of Mines (ISM), Dhanbad, School of Planning and Architecture (SPA), New Delhi, National Institute of Foundry and Forge Technology (NIFFT), Ranchi, National Institute of Planning and Architecture (SPA), New Delhi, National Institute of Foundry and Forge Technology (NIFFT), (NERIST) and

the Sant Longowal Engineering and Technology Institute (SLIET). Moreover, in the states and in the private sector, there are numerous polytechnics and engineering schools.

A significant number of federal, state and accredited private sector technical institutions have benefited from the Modernisation and Elimination of Obsolescence, Research and Development (MRD) schemes launched in the Ninth Plan of the Seventh Plan and Thrust Areas in Technical Education. Research and Development (R&D) infrastructure facilities have been upgraded under these schemes. In the leading institutes, IITs, IIMs, IISc, RECs, etc., special focus has been put on improving infrastructure facilities. In addition, in the fields of food processing engineering, material science, genetic engineering, bio-technology, etc the IITs and IISc have initiated technology advancement missions. Started in the Eighth Plan, the Technology Development Missions succeeded in establishing strong relations between industry-institutes. Technologies produced in projects implemented under various programmes have been successfully transferred to industry.

### **New Education Policy (NEP) 2020**

"The Global Strategy for the Growth of Education (Goal 4 (SDG4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015, aims to "ensure inclusive and equitable quality education and encourage opportunities for lifelong learning for everyone" by 2030. Such a lofty aim would entail a reconfiguration of the entire education system in order to

encourage and facilitate learning, so that all the vital priorities and objectives (SDGs) of the 2030 Plan for Sustainable Development can be accomplished.

The new education policy must provide a quality education system for all students, regardless of their place of residence, with a special emphasis on traditionally marginalised, vulnerable and underrepresented groups. Training is a great leveller and the strongest opportunity for economic and social mobility, inclusion and equity to be achieved. Initiatives must be in place to ensure that, despite inherent barriers, all students from such groups are given various targeted opportunities to join and succeed in the educational system. These elements must be integrated in order to take account of the country's local and global needs and to respect and respect its rich diversity and culture. For the purposes of national pride, self-confidence self-esteem, self-knowledge, it is considered essential to instil knowledge of India and its varied social, cultural and technological needs, its inimitable artistic, language, and knowledge traditions, and its strong ethics in India's young people, cooperation, and integration.

### **Key Takeaways of NEP, 2020**

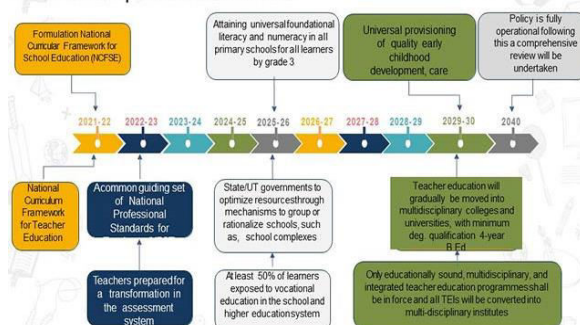
The NEP proposes significant reforms, including the opening of Indian higher education to international universities, the dismantling of the UGC and the All India Council for Technical Education (AICTE), the introduction of a four-year multidisciplinary undergraduate curriculum with several exit choices, and the discontinuation of the M Phil programme. The strategy focuses on revising the

curriculum of school education, "easier" board examinations, a reduction in the syllabus to maintain "core essentials" and an emphasis on "experiential learning and critical thinking."

The new NEP pitches for a "5+3+3+4" architecture corresponding to the age groups 3-8 years (foundational stage), 8-11 (preparatory), 11-14 (middle), and 14-18-18" in a significant shift from the 1986 policy, which pushed for a 10+2 structure of school education" (secondary). This puts early childhood education (also referred to as pre-school education for children aged 3 to 5) within the framework of formal education. The programme for mid-day meals will be expanded to children in pre-school. The NEP says that students should be taught in their mother tongue or regional language up until Class 5. The strategy also aims to phase out all single-stream institutions and that all universities and colleges should strive to become multidisciplinary by 2040.

## Structural Roadmap of NEP, 2020

Timelines for Implementation in NEP 2020



## INNOVATIONS IN NEP 2020

- (1) 100 of India's top universities will be encouraged to work overseas.
- (2) 100 Top International Universities in India will be approved and facilitated to operate

(3) Each classroom shall have access to the latest educational technology which enables the learning experience to be improved.

(4) Faculty Stability shall be given in a specified institution, with no transition to other institutions as a general rule.

(5) Within an authorized system, faculty members receive curriculum and pedagogy rights.

(6) Faculty compensation & responsibility will be fixed based on academic and research results.

(7) The Fast-track Faculty Promotion Scheme will be offered for high-impact research contributions.

(8) A multiple parameter-based API policy will be in place with input from peers & students, teaching & pedagogy developments, professional development programs, quality and effect studies, admission contribution to an institution, and social group contribution.

(9) The institutional development strategy will specifically describe the API policy.

(10) Emphasis on attaining a 50 % Sustainable Education Development Target (SEDG) & GER by 2035.

(11) All registered Ph.D. students should take one subject related to the development of teaching/curriculum and consider teaching assistantships to enhance teaching abilities.

(12) All students should be encouraged to take at least two online courses per semester at SWAYAM.

(13) Strengthening the reach of at least 50 percent of the student population through Technical Education (VE). HEIs will schedule how all students will be given VE.

(14) Intend to send B.Voc. As a dual degree in ODL (Online Distance Learning) mode or

a 2-hour evening program through Skill Labs & Industry & NGO Collaboration.

(15) Currently, investment in research & innovation in India is 0.69 percent of GDP, compared to a global average of 3 percent of GDP.

(16) Inclusion as a very important part of study and internships in the undergraduate curriculum.

(17) The Higher Education Commission of India (17) the four roles of (1) regulation (NHERC), (2) accreditation (NAC), (3) funding/grants (HEGC), and (4) academic standard setting (GEC) are regulated by an umbrella institution (HECI).

## IMPLICATIONS OF NEP 2020 ON INDIAN HIGHER EDUCATION SYSTEM

**(1) Only competent role models have the ability to rise to the top of the decision-making role:** Policy-making decisions on higher education and the implementation of such policies can come from bureaucrats and fake educators in top decision-making positions such as UGC Chairmen, AICTE, MCI, DCI, and Vice-Chancellors of Different Universities. For example a person without a single scholarly publication can become Vice-Chancellor of Public Sector Universities in the current HE system in India and can rise to various higher positions and even become UGC's chairman. Similarly, an individual without a single patent can become a Technical Institutions Director and may eventually become the AICTE Chairman. In Higher Education Divisions, including the Association of Indian Universities, an individual without a single IPR such as

scholarly publication or patent may reach decision-making authority.

**(2) Bureaucratic framework for cleaning up higher education:** Merit-based appointments of institutional leaders in science & innovation. Professors without at least five first author academic publications or patents within the last five years, unlike the existing scheme, would not become institutional leaders such as directors, vice-chancellors, etc.

**(3) Conversion of single discipline colleges into autonomous multi-disciplinary degree-awarding colleges:** This will help eliminate corruption and lobbying in colleges again. Most colleges are unable to map their own courses, governed as they are by the affiliate university's rigid bureaucratic standards. All of this fundamentally contradicts the city government theory and the local promotion of creativity and excellence. With urgency, this must be tackled. This also creates more responsible leaders to work alongside study in HE administration so that they can make better innovations in the provision of higher education services.

**(4) Emphasis on Research & Creativity at the level of UG & PG:** This encourages students and faculty members to think creatively with courage in proposing and doing new ideas that contribute to novelty.

**(5) To prevent abuse of power by individuals, the highly educated Board of Governors (BOG):** Each autonomous institution is required to have highly trained, knowledgeable and committed individuals with demonstrated skills and a clear sense of commitment to the institution.

**(6) The Board of Governors is responsible for ensuring quality:** The BOG is responsible for and accountable to the stakeholders for the results of the HEI by means of open disclosure of the relevant records. BOG must comply with all regulatory guidelines required by the National Regulatory Authority for Higher Education (NHERA).

**(7) Unified regulator for entire HEIs:** A single set-up of the National Higher Education Regulatory Authority (NHERA) contributes to successful regulation of the financial probity of HEIs, governance, transparent financial disclosure, faculty/staff, courses, and educational characteristics.

**(8) Removal of the commercialization of education:** Public and private HEIs should ensure that they are not for benefit and in the event of any surplus, under the oversight of BOG representatives, reinvest in institutional growth in order to avoid the multiplication of education.

**(9) Obligation of Private HEIs towards Educational Philanthropy:** While private HEIs can set their fees separately, by providing at least 20% free-ship and 30% scholarships. This model allows their expenses to be fairly recovered when their social commitments are discharged.

**(10) Because of the 20% free-ship offered, private universities will overtake public universities:** Brilliant and intelligent students, regardless of their economic status, religion, gender, will have the opportunity to study free of cost in private HEIs due to 20% free-ship and 30 percent scholarship contributing to the mobilization of intelligent and self-motivated students to private institutions.

**(11) Transformation of Public/Government Colleges:** Two potential processes of transformation: (a) Associated public/government colleges can gradually become multi-disciplinary and extend their capacity to accept 3,000 or more students annually and become independent colleges (AC). (b) Small colleges with less funding and student feeding areas will be transformed into an affiliated university's constituent college and will receive mentorship and all other forms of support to provide quality education.

**(12) Transformation of Private Colleges :** Three possible of Transformation: (a) The private sector colleges can eventually expand in terms of their resources and quality of education and reaches a predefined accreditation status to become Autonomous Degree giving college,(b) Some small colleges with one or two disciplines and have no scope of expansion to admit 3,000 or more students will join with similar (same management or same religion) colleges in that region and may become a group of colleges or a cluster and transform themselves into a degree giving Autonomous College, (c) The private colleges which cannot form cluster or part of a group and fail to reach the pre-defined accreditation status will eventually close down their operation.

### Suggestions

**(1) Ph.D. should be a required requirement at Colleges & Universities for a permanent teaching position:** Like Integrated B.Ed. Compulsory certification for teaching in Foundation, Preparatory, Middle and High School, Ph.D. Study should be a compulsory degree for teaching

in college and university. This is due to the fact that as per NEP 2020, study will be an integral part of bachelor's and master's degrees.

**(2) Compulsory Faculty Annual Publication leading to IPR:** The generation of IPR should be compulsory in order to preserve sustainable quality and to prevent faculty obsolescence in colleges and universities. In this respect at least two open access academic research papers with Govt. copyright certificates should be issued by the university faculty. India, or at least two proofs of annual patent submissions, refused to suspend the annual rise.

**(3) Use of retired professors' services as research guides:** The demand for research guides is growing for broad Ph.D. degree holders in autonomous colleges due to improvements in NEP 2020 policies. Using the services of retired professors with good research experience is the optimum solution for solving this shortage. It is proposed that the services of retired professors should be used by universities as study guides. Retired professors, irrespective of their age, should therefore be used as research professors to direct research scholars for their Ph.D. Such an idea would eliminate the shortage of study guides.

**(4) Compulsory publication/patent during postgraduate courses:** As part of their degree requirement, students are required to do research based on industry internships and write scholarly papers/own patents. During their undergraduate program, IPR-related awareness should be given so that compulsory copyright/patent enforcement during the postgraduate period is possible. Fixing the goal and constant follow-up by motivation leads to results.

**(5) Universities should have their own publication unit:** Publishing or patenting is the goal of academic study at the level of HEIs. The dissatisfaction of researchers in the process of scholarly publication or holding a patent is one of the reasons for decreased academic interest in India, and time and expense or loss of copyright to so-called foreign publishers are forever without any financial benefits. All universities should start their own digital publication units in a systematic way to publish high-quality research and share it with global indexing agencies in order to avoid such losses for researchers and the country. Such a model of university publishing avoids predatory journals that pursue the illegal or immoral publication process.

**(6) Earn while studying Encouragement based on vocational training:** In order to promote self-dependence after 18 years of age, students should be encouraged to develop skills in their field of interest and participate in some kind of economic/productive activities, thus reducing their dependence on parents. This is possible through professional education and building their confidence to receive while learning programs. At HE level, vocational training focused on earning while learning can be improved by offering additional credits to the Academic Bank of Credits (ABC).

**(7) Compulsory Employability & Entrepreneurship related papers to encourage Employability & Entrepreneurial ability among students in each semester:** The undergraduate curriculum should be structured in such a way that, apart from core subjects, non-core subjects, and elective subjects, there should

be two skill-based subjects focusing on employability skills and entrepreneurial ability skills. Without conducting semester end tests, the assessment scheme for these skill-based subjects should be continuous internal assessment. Such a creative model gives students confidence in choosing an entrepreneurial career.

## Conclusion

In determining the economy, social status, adoption of technology, and healthy human behaviour in every nation, higher education is an important feature. The responsibility of the education department of the state government is to develop GER to include every citizen of the nation in higher education offerings. India's 2020 National Education Policy is moving towards achieving this aim by developing revolutionary policies to boost quality, attractiveness, affordability and supply by opening up private sector higher education, while at the same time retaining strict quality controls in all higher education institutions. Finally, the Indian higher education system is shifting from teacher-centered to student-centered, information-centered to knowledge-centered, skill-centered marks, examination-centered to experimental-centered, learning-centered to research-centered and competence-centered options.

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