

A Critical Assessment of Draft Indian National Education Policy 2019 with respect to National Institutes of Technical Teachers Training and Research

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Abstract

The gaps with respect to engineering faculty training and development in the draft National Education Policy 2019 (NEP 2019) have been identified. The NEP 2019 totally neglected the role, contribution and the desired growth beyond 2020 of four National Institutes of Technical Teacher Training and Research (NITTTRs). Also, there is no mention of the Polytechnic Colleges which substantially contributed to the industrial development through well trained technicians. Further, the role of various Professional Associations, Boards of Apprenticeship Training, linkages of engineering institutes, industries, government and society have been omitted. Moreover, the desired growth of Type-I universities has not been considered beyond research works. The critical analyses have brought the gaps in the policy document and the remedial measures are to be included in the validated policy document. Considering the reputation at global level, the future proactive roles of four NITTTRs are synthesized and presented.

Keywords: NEP2019, Role of Polytechnic Colleges, Role of NITTTRs, Multidisciplinary postgraduate and doctoral engineering teacher education.

Introduction

The Draft National Education Policy 2019 has been submitted by the committee of experts to the Minister for Human Resource Development (HRD) in May 2019. There is a need for evaluation and validation of the NEP 2019 so that the improvements could be incorporated in it before the parliament approves it. Once it is approved next ten years the funding from the governments would be based on the NPE 2019. All the engineering graduates face a very tough problem of meeting the industrial skill needs due to fast growth on innovations in design, production of equipment, machines and services due to disruptive advanced technologies. The engineering profession is interested in government support to continuously modernize the engineering education so that they can contribute to the growth.

Need for Research

There is an urgent need to fill up the gaps in the draft NEP 2019 with respect to engineering education, engineering teacher education, links with the industry, envisaged role of professional associations in collaborating with

institutes in the skill development of the engineering graduates and the growth of the polytechnic colleges.

Research Questions

The following are the research questions for the evaluation of the NEP 2019:

1. Whether the National Education Policy 2019 (draft) considers the contributions of four NITTTRs to Indian Engineering Education and Polytechnic Colleges through curriculum development, faculty development, assistance to State Directorates of Technical Education through dedicated Extension Centers, Interdisciplinary Research Works through Ph.D., in Engineering Education, Diverse Global Faculty Development under International Development Agencies, Academic Consultancy rendered to World Bank assisted projects in technician education (Tech Ed I, II, and III), TEQIP I and II, and Contribution to the Government Engineering Departments and to the Industries in the last 55 years?
2. Whether the Draft NEP 2019 focuses on the impact due to the trained polytechnic faculty and periodically revised curricula on the growth of industries in various regions of India?
3. Whether the draft NEP 2019 supports the formation of Engineering Education University?
4. Whether the needed linkages of NITTTRs with the engineering colleges/ state technical universities are focused similar to that of NIEPA/NUEPA?
5. Whether the draft NEP 2019 compared the contribution to the Technical Manpower with that of NCERT?
6. Whether the draft NEP 2019 compared the contribution of Polytechnic Colleges with that of Vocational Institutes?

7. Whether the draft NEP 2019 would support the formation of National University in Engineering Education in the near future?
8. Whether the draft NEP 2019 contemplates the needed outstanding faculty with multidisciplinary skills in engineering and engineering education?
9. Whether the shortages in skills and competencies of the engineering graduates to meet the fast-growing digital technology disruptions are identified by the draft NEP 2019?
10. Whether the NEP 2019 demands the assessment of the needed technicians, engineers, and researchers through economic methods of forecasting?
11. Whether the needs for a multidisciplinary national institution for developing needed faculty development for state engineering colleges, curriculum evaluation, preparing outstanding outcome based undergraduate, postgraduate and research programs to meet the global challenges of Indian industries has been envisaged by the draft NEP 2019?
12. Whether the role of National Institute of Labour Economic Research and Development (NILERD/IAMR) has been envisaged to expand the engineering institutes?
13. Whether the role of professional associations like Indian Society for Technical Education (ISTE), Indian Institute for Training and Development (ISTD), Institution of Engineers (India) (IE), Indian Geotechnical Society (IGS), etc. are recognized for their contributions to the advancement of knowledge capital, faculty development etc. by the Draft NPE 2019?
14. Whether the need for Institute-Industry-Government- Community Partnership has been recognized?
15. Whether the role four Boards of Apprenticeship Training for training the engineers have been recognized in training the engineering and non-engineering graduates?
16. Whether the extended roles of Type-I universities have been recognized to become entrepreneur universities in developing intellectual properties, and creating link with the industries and entrepreneurs by incubation, pilot studies and collaborative research projects?
17. Whether NITTTRs can become standalone universities?
18. Can we move engineering education into multidisciplinary colleges and universities as per NPE 2019 (P15.2 Page 285)?
19. Can we establish departments of engineering education in universities (P 15. 3.1-Page 288)
20. Who are the faculty in teacher education (pP5.3.3 p 289)?
21. Can we plan 4- year B. Tech. Ed programs (P15.3.2. p 289)?
22. Can we plan online engineering teacher education (P15.3. 4. p 289)?
23. Can we develop research-based engineering teacher preparation (P15.3.5 p 289)?
24. Can we establish interdepartmental collaboration for special subject? (P15.3.6-p290)
25. Can we plan post-graduate and doctoral programs in engineering education? (P15.3.7 p 290)?

Research Methodology

1. Adopt critical appraisal of the proposed Draft NEP 2019 and compare with the existing provisions of NEP 1986 and revised NEP 1996.
2. Use the process of policy analyses, suggest needed policy improvements which can be used for funding the professional growth of the faculty, graduates, industry specific multidisciplinary research programs in engineering education.

Comparison of Polytechnic Colleges and Vocational Institutes

The policy document provided more importance to vocational education and totally neglected the growth of polytechnic colleges which come under MHRD.

Table-1

Issues	Polytechnic Colleges	Vocational institutes
Curriculum	Industry Relevant	Not focused on the jobs.
Entry level Jobs	Middle level supervisors in industry	Not defined but skilled jobs.
Contribution to industrial needs	Substantial	Yet to stabilize
Recognition	Well recognized	It is yet to be recognized.
Further growth	Lateral entry into B. E/ B. Tech	Undefined
Entrepreneurship	around 2-5%	Unknown
AICTE	Approves the curriculum, funds faculty training, provided funds	Not connected with AICTE

	for modernization.	
Accreditation	NBA	Unknown
MHRD	Developed through World Bank assisted projects.	Nil
Controlling Organization	rectorate of Technical Education	NCERT
National Institute of Labour Economic Research and Development (NILERD/ IAMR)	Should continuously conduct research and publish forecasting.	Conduct sector specific research based on the States funding
Board of Apprenticeship Training (BOAT)	Arranges on the job training	Arranges on the job training
Competitors	Engineers, AMIEs, & post- diploma holders.	Industrial Training Institutes and Apprentice trainees.

The above table shows the contribution of polytechnics to the industries.

Faculty Development

The faculty development by Academic Staff Colleges and NCERT have been considered but the performance and the future growth of NITTTRs have been omitted.

Table-2

Development channels	Polytechnic faculty	Vocational faculty
Professional Training	NITTTRs	NCERT
Professional Association	ISTE	NIL
AICTE	Summer and winter schools	NCERT
Long-term Faculty Development Programs	B.E and M.E programs of the engineering colleges	Unknown
PhD., in Engineering education	Polytech faculty have completed this interdisciplinary research program.	Not applicable

Polytech faculty have been trained to create around 150 industry relevant programs through polytechnics. These institutes can be compared to Community Colleges of USA or Canada.

Faculty Development for Engineering College Faculty

Table-3

Areas of Training	Faculty of Engineering Colleges
Content updating	IITs, NITs, Academic Staff Colleges
Andragogy	NITTTRs
Masters and Ph.D.	Autonomous Colleges, State Technical Universities, NITs, IITs
Educational methods, Curriculum, Evaluation, Institutional Development and Transformation, Interdisciplinary postgraduate programs and Ph.D.	NITTTR Programs like M. Tech. Ed., M. Tech. (HRD), and Ph.D.,

The Engineering College faculty have been included based on the recommendation of Bhattacharya Committee (1991).

Envisaged Engineering Teacher Education by NEP 2019 under Chapter 15 Teacher Education

The suggested faculty development programs are presented in Table-4.

Table-4

Interdisciplinary Faculty Development Programs

Suggested Program	User Institutions
Integrated Bachelor's Degree	School Education, should replace low quality commercial programs
High quality teacher education system through Strong Education Department in multidisciplinary colleges and universities	No university is having multidisciplinary engineering teacher education. NITTTRs are offering needed courses through their faculty members.
Moving engineering teacher education into multidisciplinary colleges and universities (P.15.2)	Except NITTTRs no other institution/ university has institutionalized engineering teacher education.
Moving all teacher preparation programs into multidisciplinary Higher Education institutions; building education departments and connections between HEI and schools/school complexes.	Even IITs, NITs and State Technical Institutes depend on NITTTRs for their teacher training. Under TQEP, NITTTRs assisted the state technical universities and NITs in planning detailed project proposals and faculty development.

<p>To this end, multidisciplinary higher educational institutes will work towards establishing high quality education departments and teacher education programs, and will be supported by governments as necessary to achieve the goal.</p>	<p>NITTRs are the only institutes in India which can offer these multidisciplinary postgraduate programs, planning global diverse faculty development programs, bidding and winning global faculty development programs under IDAs. The need to be nurtured. They are all well recognized global institutes.</p>
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The accomplishments of NITTTR Chennai prove that the Institute is pioneer in engineering faculty development.

Setting up Departments of Education for preparing faculty for professional education (P 16.4.1)

According to NEP 2019: “In order to strengthen teacher education in the professional streams, Departments of Education will be set up, if they don’t exist, at all universities that affiliate colleges offering professional education in any discipline. It is expected that these universities will eventually evolve into multidisciplinary HEIs. These Departments of Education will develop curriculum for teacher education in the respective professions and offer at Master’s degree in Teaching and Research, which will be mandatory qualification for all aspiring teachers, to be taken besides a master degree in their subject specialization. The course will orient aspiring teachers and practitioners on curriculum development, pedagogy, assessment techniques etc., and will be delivered in the part-time, blended, or online mode to enable access to working professionals”.

Contributions of NITTTR-Chennai since 1964

- Short-term courses based on the expressed needs of the State directorates.
- Offered Dip. T.T., Dip. Sc., B. Tech. Ed., Cert. T.T, and Cert. E.T courses for Engineering Teachers.
- Established extension centers in Andhra Pradesh, Karnataka, Kerala, and Telangana for offering faculty development programs and assistance in planning state specific curricula.
- Offered interdisciplinary M. Tech. (HRD), M. Tech. Ed, programs to Engineering Faculty members.
- Offered multidisciplinary research leading to Ph.D. in engineering education to the preservice teachers, in-service teachers, fresh graduates, and part-time candidates.
- Around 100 research scholars earned Ph.D. in the multidiscipline.

- Around 1500 diverse global participants have undergone professional development programs through various sponsoring organizations.
- Assisted the states to plan detailed project preparation for assistance from World Bank.
- Offered short-term courses in Curriculum Design, Instructional Materials Development, Measurement and Evaluation, Institutional Development and Transformation, Higher Education Management, Student Personnel Administration, planning diverse global faculty development, bidding for global projects under IDAs, establishing consultancy centers, establishing publication centers, etc.
- Conducted national and international seminars and conferences on Globalization and Networking of the Engineering Education.
- Undertook academic consultancy under World Bank assisted projects.
- Successfully completed faculty development projects under Asian Development Bank, DANIDA, GIZ, SIDA, UNDP, UNESCO, USAID, and World Bank.
- Prepares MOOCs in collaboration with other NITTTRs.

Problems Faced

- Slow approval of innovative programs by the affiliating university
- Most of the CEOs are not specialists in Engineering Education, interdisciplinary research, curriculum development, etc.

Suggestions from Research and their Reflection in NEP 2019

Table-5 Area-1 [Governance, Performance Management, Desired Educational Ecosystem, Institutional Transformation, Quality Assurance, Industry- Institute-Government Partnership, and Autonomy to High Performing Faculty Teams].

Suggestion made by the author	Reflection on the NPE 2019
Enhancing Institutional Governance beyond the Society’s Act of 1860 (Steps to Improve Autonomous Institute’s Administration through Board of Governors) [19].	Chapter 17: P 310: “Empowered Governance and effective leadership for higher education institutions”. P17.1 9 (page 311) “Each higher education institution will be governed by an independent Board- this will ensure a clear chain of responsibility and accountability within”.

	Chapter 18: p18.6.4 principles of good governance”.
Educational Management Ecosystem for Facilitating the Development of Professional Competence in CEOs in Higher Education Institutes [25].	Chapter 16. “Professional Education must seek to develop individuals with the capacity to combine a strong foundation of theoretical knowledge and specific competencies; the ability to connect theory to practice; an understanding of how their profession impacts and is impacted by society; generic competencies such as decision making, critical thinking, problem solving, and communication; and an ethical compass and disposition to be constructive, contributing citizens. Achieving such a goal necessitates that professional education be integrated with liberal education”. (p293)
Performance Management and Turnaround Mechanism of Poorly Performing Institutes [26].	1.1. “Empowered governance and effective leadership”.
Radical and Virtual Innovation Center for Human Resource Development [40].	Institutional governance will be based on full autonomy-academic, administrative and financial-for all higher education institutions with financial certainty and backing” (p 312).
Model for Learning Organization [6,8].	17.1.14 “Continuous professional development for heads of institutions and others in leadership roles”.
Advanced Educational System to Undertake International Projects in the Engineering Institutes under Globalized Economy [28, 1].	10; “New institutional architecture with large, well-resourced, vibrant multidisciplinary institutions for teaching and research, which will be significantly

	expand reach and capacity”.
Need for Change Models for Educational Organizations in Higher Education in India [11].	10.1.a: p 212. “HEIs will become multidisciplinary institutions”.
Desired Educational Ecosystem in the Fast-Growing Educational Institutes in India [27].	9. 3: “Moving towards faculty and institutional autonomy”. (page: 208)
Institutional Transformation and Development in the Engineering Education to meet Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) [23].	17.1.14. (page 317) Continuous professional development for heads of institutions and others in leadership roles... 17.1.15 Overall strong operational team in higher education institutions...
Critical Reappraisal of Leadership and Management Models in Higher Education with a Focus on Indian Scenario [41].	17.1: “Selection and professional development process for those in institutional leadership processes for selection of people in leadership needs to be followed, with well-defined guidelines for each position need to be followed, with well-defined guidelines for each position based on the role and the competencies required for the role”.
Comparative Study between Affiliated Engineering Colleges and Deemed Universities [5].	Tier III colleges will be formed. They can offer degrees”.
Institutional Design to Support an Educational Transformation in Engineering Colleges in India [31].	9.3: “Through faculty autonomy, faculty will be enabled and motivated to innovate in their teaching and pedagogical approaches, student assessment, community service initiatives and research, and share best practices and ideas with each other in university wide and larger forums in order to continuously improve”.

Building Organizational Learning Capabilities in Affiliated Polytechnics [8].	Polytechnics were not considered.
Integrated Model for Institutional Development to Create Excellence in Technical Education [31].	Chapter 17: “high quality education and research requires intellectual ferment in a culture-the governance of higher education institutions determines the culture”.
Global Convergence to Improve the Internal Quality Assurance for Postgraduate Engineering Programs [16].	Refer to 16.9.2
Strengthening and Sustaining of Industry-Academies-Government Partnership Improvement [17].	Refer to P 16.9.3.
Industry-Academia Interaction in Engineering Education through Professional Associations [32].	16.9.3: “encouraging industry interactions”.
Transformation in Indian Engineering Education through Academic Autonomy to High Performing Faculty Teams [21].	13.1 Putting faculty into the heart of higher education institutions: motivating and energizing to achieve high quality in higher education; ensuring service conditions to excellent teaching and research; enabling vibrant university communities through faculty empowerment; incentivizing excellence through merit-based career management; creating a culture of excellence through outstanding institutional leadership; higher education faculty must be valued and supported with excellent preparation and conducive working environments (page: 258-59).
Strategies to Accelerate Autonomy to High Performing Institutes [10].	13.1.4: Institutional Autonomy for Recruitment. P13.1.5: Empowering and motivating institutional culture. P 13.1.6: Permanent

	employment track for university staff
Impact of Project Polytechnics on the States [42, 43, 44].	
Impact of World Bank assisted Project on North Eastern States [42, 43, 44].	

NEP 2019 has been well prepared to solve many problems in educational administration, management and faculty selection and autonomy. The research outcomes are well reflected in the NEP 2019.

Table-6 Curriculum Planning

Suggestion made by the author	Reflection on the NEP 2019
An integrated curriculum model for three-year diploma program in civil engineering [7].	9.4 Curriculum, pedagogy, assessment, and student support will be revamped.
An integrated model for instructional design and delivery in Engineering Programs [12].	16.9.1: Curricula must be renewed with a focus on opportunities to engage deeply with the field and be more inclusive of other disciplines.
Curriculum design for industry relevant and interdisciplinary postgraduate programs in engineering and technology [15].	16.9.2: “Indian National Academy of Engineering (INAE) will devise appropriate curricula.” (p308).
Planning and developing outcome-based engineering curricula to meet the needs of growing Indian industries [20].	12.1: Innovative and responsive curriculum and pedagogy (page 241). P12.1.2: Development of vibrant and rigorous curricula.
Narrowing the gap between engineering education and industry through science, technology, economics, management and fire-fighting [45].	16.9.3: Encouraging Industry Interactions: Industry-academic collaborations, b) appointing faculty with research and industry experience, c) industry experts on boards of studies, d) internships, e) sharing state of art resources
Critical reviews of selected postgraduate programs in transportation engineering against the needs of the	12.1.3: National frameworks for learning goals (NHEQF); P12.1.4:

infrastructure development [24].	Stimulating learning experiences through effective teaching and learning and pedagogical resources.
Valid and reliable grading and evaluation system in engineering education [29].	12.1.6: Assessment for development and not judgement; P. 12.1.7: Curriculum and pedagogy to be institutional assessment and development.

In Curriculum planning, NEP suggests most appropriate methods. INAE may have sufficient faculty or experts to prepare curricula. The faculty needs more exposure to plan needed outcome- based curricula. All NITTTRs can take up as a national project.

Table-7 Entrepreneurship development

Suggestion made by the author	Reflection on the NEP 2019
Entrepreneurship and Innovation in Engineering Education [18].	Entrepreneurship has been suggested.

There is a focus on entrepreneurship development.

Table -8 Faculty Development

Suggestion made by the author	Reflection on the NEP 2019
Lecturer induction and mentoring program [14].	13.1.8. Orientation program for new faculty (p 261).
Development of NITTTR as a World Class Institute to provide services under GATS [9].	16.4.1 (page 299). Setting up departments of Education for preparing faculty for professional education.
Improving Faculty Performance through Effective Human Resource Management Practices [46].	Universities will eventually evolve into multidisciplinary HEIs.
Dynamic process for enhancing engineering faculty competence in India [30].	Departments of education will develop curriculum for the teacher education and offer the Master’s degree in teacher education and research which will be mandatory qualification besides a Master’s degree in their subject specialization.

Contributions to diverse engineering faculty and to the South Asian Regional Development [33].	2.4: Internationalization of higher education; p 12.4.1: Internationally relevant education
Strategies for promoting globally competitive engineering education in India [35].	12.4.3: Encouraging institutional collaborations; P 12.4.6 Student exchange
Strategies for self-regulated learning by engineering students [37].	12.1.5: Meaningful opportunities for all social engagement for all students in higher education.

The Focus on faculty development is sufficient. It is hoped that the CEOs would sincerely follow the suggestions of NPE 2019. Globalization of higher education has been focused very well.

Table -9 Interdisciplinary Research in Engineering Education

Suggestion made by the author	Reflection on the NEP 2019
Enhancing Interdisciplinary Research in Engineering Education (IRDEE) [48].	16.3 “Postgraduate education and research. Post-graduate education in the professional streams need to be strengthened considerably”.
Narrowing the gaps between engineering education and industry [45].	The curriculum must ensure that post-graduates acquire knowledge, skills, self-confidence and entrepreneurship training, to enable them to contribute to social and national productivity” (p298).
Research cluster in engineering education and human resource development [22].	16.9.2: Strategic trust on new and emerging disciplines in professional education.

Interdisciplinary and multidisciplinary research and development processes have been included and this will guide the institutions to implement.

Upgrading NITTTRs as Tier I University

As per the suggestions of NPE 2019, NITTTRs have to be upgraded into multidisciplinary research university in Engineering Education, Research, training diverse global participants under IDAs and Bi lateral schemes of Government of India, offering consultancy to industries, and other universities.

This does not a standalone university. It will provide more academic consultancy to various professional development programs. These multidisciplinary universities would offer professional guidance to vocational institutes and NCERT.

Contribution

The following gaps need to be closed:

- 1.Future growth of NITTTRS.
2. Inclusion of Polytechnic Colleges in the NEP 2019.
3. Growth of Tier III Universities into Entrepreneurial Universities,
4. Role of Boards of Apprenticeship Training, 5. Active role of Government in linking industries and the engineering institutes.

Implication

1. If the gaps are not closed, the skills and competencies of the engineering faculty members, and the graduates would be very much affected.
2. If there is no focus on NITTTRS, these institutes will not be growing to meet the gaps between the fast-growing industry and the engineering institutes. They need to be classified into Tier I institutes which will focus on Human Resources Development, Andragogy, Learning and Cognition, Multimedia Programs, MOOCs, Hybrid Programs, Educational Technology, Advances in Educational Measurement and Evaluation, Higher Education Administration, Leadership Development, Institutional Development, Strategies for Managing VUCA, Educational Economics, Financial Management, ROI, Policy Analysis, Industry Linked Advanced Research Programs, Training and Developing the Executives of Industries, Entrepreneurship Development, Multidisciplinary Research Programs, Diverse Global Faculty Development, Student Personnel Administration, Cooperative and Part-time Vocational/ Engineering Education, Internal Revenue Generation and Utilization, Development and Publication of Learning Packages, Consultancy Centers in the Industrial Corridors and Hubs, etc.
3. The active government support alone will assist the growth institute- industry- society-partnership to solve the problems in human capital and knowledge capital.
4. Linking the Institute of Human Resource Development (Institute of Applied Manpower Research) with the engineering institutions for

planning needed programs based on the realistic macro economy.

Envisaged Roles of NITTTRS in the next 12 years as per NEP 2019

Considering the contributions of NITTTRS, Table-10 provides the envisaged roles. Even if competitive bidding is envisaged these institutes would develop most desired proposals for implementing as they did for Asian Development Bank, GIZ, UNDP, UNESCO, USAD and World Bank.

Table 10 New Roles for NITTTRS

NEP 2019 Suggestions	Possible Proactive Steps that can be taken by NITTTRS
Schools of Higher Education (P10.4-p 215); Development of the new institutional architecture (P10.5) Central Government funded higher education institutions to develop into Type-I Institutions	Plan Elective Courses on Educational Planning, and Management. Institutional Evaluation and Development. Institutional Transformation. Leadership Development. Creating Centers of Excellence Student Personnel Administration. Interdisciplinary Curriculum Planning and Design. Industry-Institute-Government-Society - Partnership. Interdisciplinary Research. multimedia Learning Packages.
Chapter 12 Optimal Learning Environment and Support for Students. P12.1 Innovative and Responsive curriculum and pedagogy	Creation of self- directed learning. Planning dual programs. Research courses in the undergraduate programs Outcome based education. Dissertations based on the needs of MSMEs. Andragogy in planning instructional design.
P12.2. Student Support for learning and development.	Electives based on the students' career needs. Innovations focused learning Learning and cognition based on the human resource dynamics
P 12.3 ODL	Integration of MOOCs with F2F Instructions
12.4 Internationalization of higher education	Joint research projects, Developing Diverse Global Faculty Development; SPARK, GIAN. India-USA 21 st Century Knowledge Initiatives

15.3 Departments of Education in the Universities. P15.5 Faculty in Higher Education; P 16.9 Encouraging industry interactions.	Establishing multidisciplinary education departments; planning and conducting faculty development.
19.1 Setting up of a New Educational Technology Forum.	NITTTRs can contribute to this forum.

Results and Discussions

Indian engineering graduates have performed very well even in very demanding foreign culture and created a large number of patents and innovative products. Hence, there is an urgent need for focusing on the developing the NITTTRs as world class multidisciplinary universities so that they can contribute to the fast growth of not only to Indian industry, but also MNCs and TNCs. Unitary universities in Agriculture, Forestry, Animal Science, Fisheries, Law, Medicine, Sports, Music, Languages etc. have grown because of the decentralized knowledge development, empowerment, delegation. Under liberal arts university, they can't grow at all. The culture of liberal arts university is not conducive for specialization in India.

Conclusion

There is a need for a national debate and validation for improving the focus of Draft NPE 2019 and the growth of NITTTRs is to be ensured. This will provide more skilled and competent faculty members and engineering graduates.

There is need for validation of the NEP2019 by various educational subsystems. The validated NEP 2019 has to provide sector wise program of implementation for next 12 years.

The suggested funds are to be allocated for efficient and effective implementation.

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